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Illustrations OF HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

HOSPITAL FOR SICK CHILDREN.

CEREBRAL DISEASE: AMAUROSIS.

Under the care of W. JENNER, M.D.

[*Reported by* FREDERICK BOWREMAN JESSETT, ESQ., *House-Surgeon.*]

ELLEN C., aged 7, was admitted on November 27th, 1858. Vomiting was first noticed six weeks before admission. When three years old, she had had whooping-cough, measles, chicken-pox, and lastly diarrhœa, all in the space of three months. When she had measles, the mother stated that the child would scream and kick about; so much so, that it was as much as her father could do to hold her. The mother also says that the patient has never had fits. Leeches were applied to her neck, and a blister to the nape of the neck. The mother was obliged to rub the child's knees, because, when the patient stooped to pick anything up, she could not get up again—the mother says, on account of weakness. It was not till six months after this illness that she could play about at all: she then "picked up", and, about twelve months after her illness, returned to school. From that time until six weeks before admission, she enjoyed very good health; then she complained of her head, by putting her hand to it; and vomited constantly from 12 P.M. until 7 or 8 A.M. The mother took her to Guy's Hospital, and was ordered to have the child's head shaved, etc. The child did not entirely lose her sight until a fortnight before admission; for a fortnight before that time, she would lose her sight for some time, but it always returned again at longer intervals, until a fortnight before admission, when she lost her sight altogether. The mother knew this by the child not knowing whether there was a light in the room or not. About a fortnight before going to Guy's Hospital, the child would complain of her head, and said it came over quite dark as she went along the street, and she was obliged to stop for fear of falling. She used to walk to and from Guy's Hospital (about two miles). "Her sight went gradually." When she lost her sight entirely, she would cry night and day, and cried out, "Oh, my head!"

January 26th, 1859. *Present State.* She is constantly in bed, and unable to stand; lies on her back or side indifferently, usually on her back; answers questions intelligently; and says that she has frontal headache, "weak sort of pain in head very bad". Her hearing is good; there is no great heat of head; the cheeks are a little flushed; the lips are full and red; there is no strabismus; the pupils are large, and do not act with light. She maintains that she can see, but really cannot. She has no idea when a candle is brought to the bed. There is a little wandering motion of the eyeballs. There is no paralysis of the face or muscles of the eye. The tongue is moist, a little fissured transversely. There is no thrusting back of the head; no hyperæsthesia. She has just commenced crying, and complains of her head. There is no rigidity. She can lie with her legs drawn up or straight. She passes her stools in bed, at times unconsciously; at times calls for the nurse. Pulse 120, very small and weak. At times she is very impatient. There is no evidence of tubercle in the lungs; no dulness at bases. Her manner is a little foolish. There is no sighing or grinding of the teeth. She has had no convulsion since admission. There is but little change since admission. The nurse says, that at one time she could not straighten her legs, but can now. Until last week she has never asked for the bed-pan. At times she flushes in the face.

On examining the state of the pupils during sleep, I observed that they were contracted, but dilated when exposed to a light, and contracted again when a still stronger light was thrown on the eye. The nurse says that she is much thinner than on admission. Now and then the nurse gets her into a chair during meal times. She has no notion of feeding herself. She could walk on admission.

January 27th. The patient is evidently not so well as on the previous day. She does not talk at all as usual, and lies in a drowsy condition. The eyelids are partially closed. The pupils are still dilated. She complains much of her head. The saliva runs from her mouth during sleep.

January 30th. She has been getting worse, and is more drowsy. The tongue is covered with aphthæ. The right pupil is larger than the left. There is no paralysis or convulsion. The legs are usually drawn up, but she can straighten them. She says she has pain in the head, and points to her forehead. There is occasional flushing of the cheeks. The fæces and urine pass involuntarily sometimes.

She continued in the same state until the middle of February, and then began to improve. In the early part of March she began to improve, and could evidently see a little, so as to distinguish light from darkness. The mouth is now entirely healed; and the pupils are much smaller than they used to be.

From this time she improved rapidly; and, on March 28th, she got up and could sit in a chair. A week afterwards, she could walk about with assistance; and, in a few days longer, by herself.

On April 10th, it is noted that she now walks, sings, and plays about. The pupils are somewhat sensible to light.

She was soon afterwards discharged from the Hospital.

She was next seen on May 18th. She was then much stronger, and had gained flesh. Both pupils then acted tolerably well; the right pupil was still larger than the left. The head was very broad behind.

May 23rd. Her mother brought the child to the Hospital to-day. Her general condition is good; she is well nourished. She seems very intelligent. Her mother thinks she is quite as sensible as she was before the attack. She never sighs, and is very merry. During the state of repose, the mouth deviates a little to the right; and, when she laughs, the right side acts more quickly than the left. She closes both eyes well, but the right a little firmer than the left. The masseters and temporals act equally. She grasps equally well with both hands, and uses them well. She walks well; no dragging of either leg. She hears well. The tongue deviates a little to the [illegible]e uvula to the right. The right pupil is larger than the [illegible] acts; when turned to the window, decidedly one pupil a[illegible] well as the other: they act more strongly with daylight than candlelight. Her mother says that she is sure that she se[illegible] as, when told it is dark and time to go to bed, she says that she can see the light. Her eyes dazzle with the sun. There is no strabismus, and no ptosis. The pupils are generally large; but in a light room they are small.

REMARKS. This case is of interest on account of the child losing her sight gradually; showing that there was probably gradual effusion of fluid into the ventricles, and so pressure on the optic nerves (there is no history of tubercle in any of her family); the child's intellect remaining unimpaired; the pupils being contracted during sleep, and then acting with light; the child persisting that she could see, whereas really she could not see at all; that, at the commencement of the disease, the pupils did not act at all with the light, but latterly acted tolerably well, although the sight was but slightly improved; and lastly, that at the last report there was evidently some paralysis of the left side of the face.

ST. GEORGE'S HOSPITAL.

WOUND OF PALMAR ARCH: AMPUTATION OF ARM.

IN the JOURNAL for May 14th, we reported a case of Wound of the Palmar Arch requiring amputation of the arm, and followed by pyæmia. It was there erroneously reported as an instance of recovery: the patient has sunk from bed-sores, the symptoms of pyæmia having ceased.

DIPHTHERIA.

The following reports, though not exactly in the same form as the remainder of the table of cases of this disease which we are publishing, are of too great interest and importance to this inquiry to be omitted. We shall resume the publication of the table of cases in our next number.

I.—Diphtheria at Crowle, in Lincolnshire.

By Henry W. T. Ellis, Esq.

[The first report from Mr. Ellis bears date Feb. 24th, 1859.]

Diphtheria has prevailed here sporadically for upwards of four months, but it is only within the last two that it has assumed an epidemic form. During this period, there have been sixty-nine well marked cases, displaying the characteristic exudation, not including many of simple tonsillitis, which, had they not been early attended to, might perhaps have put on the same appearance. The disease has affected all classes, and nearly all ages; chiefly prevailing, however, amongst the small farmers, the labouring population, and children under seven years of age. Eleven adults have been the subjects of it.

There have been ten deaths. An agricultural labourer, aged 34, sank in eight days, from the extension of the disease to the larynx, trachea, and bronchial tubes. He expectorated several pieces of adventitious membrane, one of which formed a perfect cast of the larynx. Of the other nine who succumbed, three were children under six years of age, of whom two died from syncope, and the remaining six from the croupal variety. In some of these cases, the nasal fossæ became involved. In one family, three children died in ten days, convulsions having preceded the complaint in one of them.

In two of the favourable cases, a miliary eruption was present, scarlatina not having been seen here for some time. The urine in several contained albumen, but, in the last fatal one, presented no traces of it.

As regards the sequelæ, paralysis of the soft palate occurred in three cases; one an adult female, who complained much of the regurgitation of the food, but especially liquids, through the nostrils; two others had enlargement of the submaxillary glands, ending in suppuration; and in all there was more or less debility.

The most successful treatment seemed to be, locally, a strong solution of the nitrate of silver (a drachm to the ounce); and in addition, with adults (for children cannot use them), gargles of hydrochloric acid. Beaufoy's solution was tried in a few instances, but scarcely answered so well. Externally, mustard and bran and vinegar poultices were used. In one case, where, from neglect, ammonia was kept on too long, the vesicated part became covered with diphtheritic deposit. Internally, the chief remedies were the tincture of sesquichloride of iron, chlorate of potash, and hydrochloric acid; with a gentle purgative at the onset; and, in the croupal form, emetics. In some instances, the good effects of these means seemed almost magical. Quinine, wine, porter, etc., were also given; but, in many cases, there was great difficulty in using the remedies indicated; and, in some of the fatal ones, it was most unsatisfactory.

It does not appear that site, meteorological or hygienic conditions, had much, if anything, to do with the visitation of this frightful disease. This place is situated in the midst of a level country, mostly covered by what is here called *warp*, the alluvial deposit of the Trent and Ouse. It is very fertile, well drained, and highly cultivated. Since the early part of November, when the weather was unusually severe, the temperature has been mild and pretty equable; the prevailing winds being from the south-west, rarely from the north-west or south-east. The standard of health here is good; the people are not of the poorest, and certainly, in their habits, the reverse of uncleanly. It appears rather remarkable that the neighbouring villages have hitherto been exempt from the disease, although, in this place, fresh cases are daily occurring.

As regards the prevalence of the disease, it was, in a very large proportion, amongst the young, the preponderance being slightly amongst the males. The leathery exudation generally appeared on the third or fourth day (in a little girl of my own, on the third); but, in several cases, a week or more elapsed before I saw the little patient, and the parents were not aware of its presence. The average duration of the disease would be eight or nine days. I have a good specimen of the adventitious membrane, the only one which I have examined with the microscope; it was about the twelfth of an inch thick, presenting points or corpuscles of blood, several very long fibrils, and a distinct fungoid growth.

As to the communicability of the disease, I can scarcely venture an opinion; but, in several cases, two and three in a family were attacked by it.

Tracheotomy was indicated in some cases, but not performed; neither was a *post mortem* examination obtained; for, owing to the prejudice and ignorance of people in these country districts, the obstacles are almost insuperable.

[A second communication from Mr. Ellis is dated April 25th, 1859.]

I have to report sixty-four more cases of diphtheria, seven of which have terminated fatally. In the majority of instances, the patients were seen soon after the patch appeared on the tonsils; and, consequently, they have been more amenable to treatment. Nitrate of silver was used in severe cases only; for it was found that the internal use of chlorate of potash, hydrochloric acid, tincture of the sesquichloride of iron, and gargles when the patients were old enough, had in many instances almost a magical effect in removing the adventitious membrane.

Of the fatal cases, one, a stout healthy looking servant girl, aged 15, and weighing eleven stones, sank on the ninth day, from the extension of the disease into the air-passages; although, during its progress, she got rid of several pieces of the exudation, and an immense quantity of muco-purulent secretion. The poor girl showed symptoms of the disease on Saturday, April 9th; but was not seen by me until the following Tuesday evening. The tonsils, uvula, soft palate, and back part of the pharynx, were then covered by the membrane; and there was much constitutional disturbance. A strong solution of the nitrate of silver was repeatedly applied, combined with the remedies before named; emetics of ipecacuanha were also given, for a time with good effect. Subsequently, Beaufoy's solution was used; and, during the progress of the disease, wine, eggs, beef-tea, and quinine, were administered—unfortunately, however, without avail, as she died asphyxiated on the succeeding Monday. The other deaths were in children under six years of age, all within a period of seven or eight days.

Eighteen of the sixty-four cases occurred in persons above the age of thirteen; and, of this number, eight were married people. The complaint has chiefly prevailed amongst the labouring classes; and there has been no scarlatina.

Amongst the consequences of this epidemic, regurgitation through the nostrils has not been uncommon; and, in three instances, diplopia ensued, which yielded to the citrate of iron and quinine, with generous diet. In most of the cases, convalescence has been very protracted. There has been great loathing of food amongst children; and in one of my previously reported cases of recovery from the disease, the patient, a little girl, sank from debility.

II.—Diphtheria in Canterbury. By Geo. Rigden, Esq.

[The subjoined report, furnished by Mr. Rigden, is dated March 8th, 1859.]

The age and sex of the patients, together with the hygienic conditions, will be found in Table I.

The disease did not appear to be contagious, inasmuch as, although in some families several members were attacked, they were generally suffering from the disease at the same time; and there were several other families in which only one member was attacked, and yet there seemed no reason for the immunity of the others. Some of the patients had had scarlatina previously, but several had not. Scarlatina had been, and was, prevailing at the same time in this city. In one family only were some members attacked with the one disease, and some with the other. The two diseases were perfectly distinct. The scarlatina patients had no false membrane on the fauces, etc.; the diphtheritic had no eruption nor scurfing.

The first symptoms were generally those of the throat, with more or less false membrane before medical assistance was sought; great depression of vital power; with other symptoms of low fever. In several instances the urine was examined, but always with negative results as regards albumen.

The treatment consisted in the application, at once, of nitrate of silver to the entire surface of the fauces and tonsils, repeated daily; a dose of calomel, sufficient to act as a quick purgative, and often as an emetic; with wine and brandy in considerable quantities; quinine, chlorate of potash, and tincture of sesquichloride of iron.

Where the disease terminated fatally, the duration is given in Table III. The recoveries were generally very lingering. I had no opportunity of making *post mortem* examinations.

TABLE I.—*Cases of Diphtheria occurring in the practice of G. Rigden, during* 1857 *and* 1858.

Date.	Sex & age.	Result.	Sanitary state of residence.
1857.			
a *Sept. 21	M. 6	Died, Sept. 28	Bad; near the shallow banks of a river
a Sept. 28	F. 2	Died, Oct. 12	Ditto ditto
Oct. 5	F. 6	Died, Oct. 12	Crowded
Oct. 6	F. 7	Cured	Bad; near to where pigs are kept
Oct. 8	M. 3	Cured	Satisfactory; no evident defect
Oct. 12	F. 9	Died, Oct. 18	At a public house, in a crowded neighbourhood
Oct. 13	M. 38	Cured	Bad; near an offensive cesspool
b Oct. 31	F. 8	Died, Nov. 13	Dirty; house in a healthy neighbourhood
d Nov. 2	F. 6	Died, Nov. 20	Drainage defective
c Nov. 5	F. 24	Cured	Satisfactory; no evident defect
d Nov. 8	M. 4	Cured	Drainage defective
b Nov. 11	F. 42	Cured	Dirty house, in a healthy neighbourhood
d Nov. 12	F. 25	Cured	Drainage defective
b Nov. 13	F. 10	Cured	Dirty house, in a healthy neighbourhood
b Nov. 13	F. 6	Cured	Ditto ditto
b Nov. 13	M. 3	Cured	Ditto ditto
Nov. 20	M. 7	Cured	Drainage defective; soil damp
e Nov. 21	F. 27	Cured	Satisfactory; no evident defect
1858.			
e Jan. 8	F. 7	Died, Jan. 15	Ditto ditto
f Jan. 11	M. 8	Died, Jan. 17	Ditto ditto
e Jan. 16	F. 31	Cured	Ditto ditto
e Jan. 20	F. 11	Cured	Ditto ditto
f Jan. 21	M. 35	Cured	Ditto ditto
f Jan. 23	F. 12	Cured	Ditto ditto
e Jan. 25	M. 1½	Cured	Ditto ditto
e Jan. 30	F. 30	Cured	Ditto ditto
g Feb. 1	F. 41	Cured	Crowded; no other evident defect
g Feb. 12	F. 14	Cured	Ditto ditto
g Feb. 23	F. 4	Cured	Ditto ditto
Mar. 4	F. 36	Cured	Drainage defective; soil damp
g Mar. 6	M. 16	Cured	Crowded; no other evident defect
c Mar. 20	M. 13	Cured	Satisfactory; no evident defect
Mar. 22	M. 3	Died, Mar. 27	Ditto ditto
c Mar. 24	M. 26	Cured	Ditto ditto
Mar. 26	M. 6	Died, April 7	Ditto ditto
Mar. 29	M. 8	Died, April 9	Privy close to the house; offensive. Extra urbem
Mar. 29	M. 7	Died, April 15	Satisfactory; no evident defects
April 19	M. 2	Cured	Ditto ditto
h April 25	M. 23	Cured	Ditto ditto
h April 30	M. 21	Cured	Ditto ditto
May 3	F. 23	Cured	Ditto ditto
May 11	F. 10	Cured	Ditto ditto
May 13	M. 4	Cured	Ditto ditto
May 14	F. 6	Cured	Privy close to the house; offensive
May 18	F. 5	Cured	Satisfactory; no evident defect
May 20	F. 8	Cured	Ditto ditto
May 23	M. 23	Cured	Ditto ditto
June 19	F. 9	Died, June 28	Ditto ditto
June 22	M. 6	Cured	Ditto ditto
i July 8	M. 42	Cured	Crowded; near to where pigs are kept
i July 8	F. 15	Cured	Ditto ditto
i July 9	F. 41	Cured	Ditto ditto
July 10	F. 29	Cured	Bad; near to where pigs are kept
July 21	M. 40	Cured	Satisfactory; no evident defect
Dec. 9	F. 30	Cured	Ditto ditto

* The letters denote the members of the same family.

TABLE II.—*Number of cases of the following diseases occurring in the practice of G. Rigden.*

1857.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals (2 years).
Diphtheria									2	6	10		
Pharyngitis		3		3	4	2		1	1				
Stomatitis						1	4						
Croup						1							
Cancrum oris							1						
Scarlatina	7		2	2	3	2	10	8	1	2	2		
Totals	7	3	2	5	7	6	15	9	4	8	12	0	
1858.													
Diphtheria	8	3	8	3	7	2	5					1	55
Pharyngitis													14
Stomatitis													5
Croup	1										1		3
Cancrum oris													1
Scarlatina	5				1			10	2				57
Totals	14	3	8	3	8	2	5	10	2	0	1	1	135

TABLE III.—*Mortality from Diphtheria in the City of Canterbury. From the Register of Deaths. Population* 18,398.

Date.	Sex & age.	Cause of death.	Attended by.
1857.			
a June 30	F. 9	Diphtheritis.	
a July 4	F. 4	Diphtheritis, 4 days.	
Sept. 10	F. 3	Diphtheritis, 10 days. Tracheitis, 3 days.	
b Sept. 28	M. 6	Diphtheritis, 1 week.	Mr. Rigden.
Oct. 12	F. 6	Diphtheritis, 7 days.	Do.
b Oct. 12	F. 2	Diphtheritis, 2 weeks.	Do.
Oct. 18	F. 9	Diphtheritis, 6 days.	Do.
Oct. 19	F. 4	Diphtheritis, 5 days. Purpura hæmorrhagica, 2 days.	
Nov. 13	F. 8	Diphtheritis, 13 days.	Do.
Nov. 20	F. 6	Diphtheritis, 18 days.	Do.
Dec. 27	F. 6	Diphtheritis, 11 days.	
1858.			
Jan. 13	F. 7	Diphtheritis, 5 days.	Do.
Jan. 17	M. 8	Diphtheritis, 6 days.	Do.
Jan. 20	M. 8	Diphtheritis, 10 days.	
Feb. 4	F. 6	Diphtheritis.	
Feb. 5	M. 10	Diphtheritis, 2 weeks. Pneumonia, 1 week.	
Mar. 5	M. 6	Diphtheritis, 10 days.	
Mar. 27	M. 3	Diphtheritis, 6 days.	Do.
April 7	M. 6	Diphtheritis, 12 days.	Do.
April 9	M. 2m.	Diphtheritis, 11 days.	
April 15	M. 7	Diphtheritis, 17 days. Anasarca, 2 days.	Do.
June 19	F. 7	Diphtheritis, 5 days.	
June 23	F. 4	Diphtheritis.	
June 28	F. 9	Diphtheritis. Purpura.	Do.
July 31	M. 5	Diphtheritis, 2 weeks.	
Oct. 13	M. 28	Diphtheritis, 5 days.	

Table IV.—*Mortality in the City of Canterbury from the following diseases. From the Register of Deaths. (Population* 18,398.

1857.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals (2 years).
Diphtheria						1	1		2	4	2	1	
Pharyngitis			1										
Stomatitis								1					
Croup	2	1		1									
Cancrum oris					1		1						
Scarlatina.....	4	2	2	2	1		1		1		2		
Totals	6	3	3	3	2	1	3	1	3	4	4	1	
1858.													
Diphtheria	3	2	2	3		3	1			1			26
Pharyngitis													1
Stomatitis									1				2
Croup	2	1			1						2	1	11
Cancrum oris													2
Scarlatina.....						1		1	2				19
Totals	5	3	2	3	1	4	1	1	3	1	2	1	61

Original Communications.

FIVE CASES OF OVARIOTOMY—THREE SUCCESSFUL; WITH PRACTICAL REMARKS.

By I. Baker Brown, Esq., F.R.C.S., Surgeon to the London Home for Surgical Diseases of Women.

[*Read before the Harveian Society of London.*]

It is not my intention to enter fully on the subject of Ovariotomy in this paper, but merely to relate five cases of ovarian disease in which extirpation has been effected, each possessing peculiar features, and therefore worthy of some practical remarks. The consideration of this dangerous operation has, during the past year, attracted the attention of many surgeons; and I believe, in this city, all the cases have been recorded faithfully. To further this plan, I now desire to record my experience of the past few months; my more extended experience on ovarian diseases generally, since 1830, has been from time to time honestly placed before the profession, either in the medical journals, or in my work *On Surgical Diseases of Women.* In that work, I have entered so fully into the most minute points of the operation, that it is not necessary to take up your time or attention by recapitulation. The work is in the library of this Society; and therefore every member can refer to it hereafter, if he pleases to do so.

Case I. *Ovarian Dropsy, Multilocular; Extirpation; Cure.* Laura P., aged 20, married, without children, soon after marriage, two years ago, noticed an enlargement of the abdomen, which went on increasing until March 1858, when she had an attack of peritonitis, from which she soon recovered, but had a relapse. Again, at the end of May, she had a third attack. After this, I saw her with the late Dr. Engledue, and found her suffering from great debility, and the results of the peritoneal inflammation. I ordered tonics of quinine and iron; and these had the effect of much improving her general health. An examination now showed a great enlargement of the abdomen, which evidently was multilocular ovarian dropsy. It appeared to have adhesions on the anterior and right lateral parts. The menstruation was irregular.

It was evident that extirpation was the only thing which offered a hopeful result. I placed its dangers fairly before her; and, after due consideration, she elected to undergo the operation. She was accordingly admitted into the London Home on October 12th, 1858. After a few days preparatory treatment, I proceeded to operate on October 20th, assisted by my colleagues Dr. Priestly, Messrs. Nunn, Philip Harper, and others. Dr. Kidd administered chloroform. One hour before the operation, she took two grains of opium, and a glass of port wine. I made an incision from the umbilicus to the pubes, and gradually cut down to the peritoneum, which I then opened, and the cyst presented itself. I grasped it with strong vulsellum forceps, and let out a large quantity of thick albuminous fluid through a large trocar. Introducing my hand, and gradually working around the cyst, I broke down the adhesions, which were especially situated low down on the right side. There was only one of any importance, and this I tore through. The mass of cysts was now gradually emptied and drawn out of the abdomen. The pedicle was long and thin; a pair of calipers was tightly fastened around it, and the cystic mass was cut off. The whole of the fluid which had escaped into the abdominal cavity was carefully sponged out, and the edges of the wound brought together with iron wire sutures, inserted at intervals of half an inch. The pedicle was secured at the lower end of the wound, and retained there by the calipers, which were left on. The wound was now covered with wet lint and long strips of plaster; a broad flannel many-tailed bandage was fastened around the abdomen; and the patient was removed to bed. Hot bottles were put to her feet. As soon as the effects of the chloroform had passed away, she had one grain of opium, and was ordered to be kept well under its influence. Pulse 92. Iced port wine was given occasionally.

October 21st. She passed a quiet night; pulse 120; slight sickness. In the afternoon she had some pain, apparently from flatus; for which a tube was occasionally introduced into the rectum, when a good deal of wind was discharged.

October 22nd. Pulse 106. There was no pain. She had slight sickness. She was ordered to have some partridge, and brandy with soda water.

October 23rd. Pulse 100. She slept pretty well. The catamenia appeared.

October 24th. Pulse 90. The dressings were removed, and the wound was found healed by the first intention. She was ordered to take dilute nitric acid and decoction of cinchona three times a day.

October 27th. The calipers were removed.

She went on perfectly well, and without a single bad symptom; and now (March 1859) is in perfect health and has grown stout and ruddy, and menstruates regularly. At each epoch, the skin just over where the pedicle was secured breaks, and there is a vicarious discharge during the whole period; but, as soon as that is over, the skin heals up again.

Remarks. The practical observation in this case is, that the patient was so ill from the repeated attacks of peritonitis, that, when I first saw her, I thought there was but little hope of her ever being well enough to undergo the shock of an operation, and nothing but generous diet and a course of quinine and iron would do her any good. Under this treatment she steadily improved; and, feeling most anxious to undergo the operation, had strong faith in a successful result. The nature of the cyst, which I now exhibit, will satisfy the members of the Society that no other mode of treatment could have offered any hopes of benefit; whereas tapping simply would have hastened death.

Case II. *Ovarian Dropsy, Multilocular; Extirpation; Cure.* A. P., single, aged 26, in the early part of June 1857, perceived a slight swelling low down in the right side, accompanied with an oppression at the chest, and some pain between the shoulders. The swelling increased rapidly for the first month; and after that period much more slowly, though perceptibly. There was a good deal of nausea and sickness, especially in the morning. At different intervals she expectorated blood, but without cough. She underwent various kinds of treatment, but without benefit. In August 1858, she was placed under the care of Mr. Jackson of Sheffield, who immediately discovered that she had ovarian dropsy, and recommended her to apply to me. On October 2nd I examined her, and found that she was suffering from multilocular ovarian disease, and that there were probably no adhesions. Her general health appeared a good deal broken; I therefore ordered her some quinine and iron, together with a generous diet. I explained to her that there was no means of cure except extirpation; and, after due consideration, she elected to undergo an operation. Accordingly, her health much improved, on the 24th, she took some pills to open her bowels, and had a warm bath: and at 3 P.M. on the 25th, I proceeded to operate. An hour previous to the operation, she had two grains of opium and a glass of wine. The temperature of the room was raised to 70°. There were present Drs. Jackson and Aveling, and Mr. Barker, of Sheffield, and Messrs. Nunn, Philip Harper, Wratislaw, and Richards. Dr. Kidd administered chloroform. I made a small incision between the umbilicus and pubes in the mesial line, about four inches in length, and carefully divided the various tissues until I came down upon the peritoneum. This bulged out, from the amount

of effusion which was present in it. On making an opening into it, a large quantity of fluid escaped, and a large mass of cysts immediately appeared. I now punctured this with a large trocar, and emptied what cysts I could; but a very small quantity could be drawn off. The walls of the mass were so rotten as to break down under very slight pressure: I therefore was obliged to enlarge the opening, and then, with some trouble, managed to draw it out. The pedicle, which was very thick and soft, I enclosed in a pair of calipers squeezed as tight as possible, and then cut off. I then removed all the fluid which had escaped into the peritoneal cavity, and brought the edges of the opening together with iron-wire sutures, inserted at intervals of half an inch. The pedicle was retained at the lower end of the wound, and the calipers were left on. The wound was covered with wet lint and strips of adhesive plaster. A broad many-tailed flannel bandage was applied tightly around the abdomen; and the patient was put into bed with hot bottles to her feet. After the operation, the pulse was 100, and weak. She had port wine and iced water to drink; and when the effects of the chloroform had passed away, two grains more opium were given.

10·30. Her pulse was 110; she had no pain or distension.

October 26th. She had dosed at intervals, and had been sick three times. Pulse 115. The skin was warm. She had a little pain at intervals, apparently from flatus. Beef-tea, milk, and soda-water were ordered as diet; and two grains of opium were directed to be taken every six hours, if necessary, to keep her well under its influence.

She went on very well, having no untoward symptoms; and, on October 30th, I removed the dressing, and took out one suture and the calipers.

November 1st. I removed two more sutures. She progressed as satisfactorily as possible in every respect; and in six weeks left her lodgings quite well. At the present time (March 1859) she has since grown stout, and is in robust health.

Remarks. This case was one of quick growth and of a bad form, so closely bordering on the malignant, that another three months would have produced so much mischief to the omentum and bowels, as to have precluded any hope of affording relief by extirpation. The nature of the mass, a sort of honeycomb, rendered any other mode of treatment quite out of the question; and the serious effect on the general health was so rapid and so severe as to threaten a speedy termination of life. We may, therefore, fairly consider that a life has been saved by the operation.

Case III. *Ovarian Disease; Extirpation; Death.* Miss N., aged 21, unmarried, from Lubeck, in Germany, came under my care in August 1858. The account received from the medical attendant in Germany gives a clear account of her case, and is as follows:—

"Miss N. complained in her eleventh year of periodic returning pains in her stomach; though, by external examination, nothing could be perceived. After a long pause, in the spring of the year 1849, severe pains were again felt; and in the right epigastric region a swelling was discovered, which had a rough uneven surface, and did not change its position in different movements of the body. It was free from pain. The unevenness of the swelling gradually became less perceptible; and the presence of fluid showed itself, and assumed the appearance of encysted dropsy. The urinary secretion was good. In the summer of 1857, she fell, and pains came on in the abdomen, which on examination was found less pointed, and had become more level, the sides being expanded, and the parietes softer and less stretched. After some days, a flux came on, and after a time the collection of water decreased. The swelling in the right side was less to be felt than formerly. Gradually the water collected in the abdomen; and she complained much of the left epigastric region, where the swelling and pain have since remained." In addition to this, it may be remarked that she had never menstruated, and her general health was a good deal broken.

In August 1858, she came over to London, and consulted me. She was then in very tolerable health. On examination, a large multilocular ovarian tumour with fluctuation was found, more prominent on the left side than on the right. It filled up the abdomen, and was to a certain extent movable. There was no crepitation; and probably there were few adhesions. Upon a careful review of the whole case, I arrived at a conclusion that the removal of the cyst was the only thing which offered any hope of real benefit. I clearly pointed out the danger of the operation, and said that her case was not a favourable one; but that, on the other hand, no palliative treatment could be of any real benefit. The patient went away to consider about it, and did not return again for six months, when the tumour was much increased, and her general health a good deal broken up, she having been seriously ill during that time, with pain, etc., in the tumour. She was now very anxious to have an operation performed, and was accordingly admitted into the London Home, and underwent a course of mild tonics and preparatory treatment. On examination *per vaginam*, the tumour could not be felt by the finger, and the os was very high up, as if the uterus were drawn up by the tumour. The hymen was complete.

1859. Feb. 10th. At one o'clock, two grains of opium and a glass of wine were given. At 2 P.M., she was placed under the influence of chloroform by Dr. Kidd and Mr. Edwards. I proceeded to operate, assisted by my colleagues Messrs. Nunn and Philip Harper, and the visiting surgeons, Messrs. Wratislaw, Hubbard, Spencer, and Giles. I made an incision from the navel to within two inches of the pubes, and carefully cut down to the peritoneum, which was then opened to the same extent. The cyst then presented itself; and, rapidly passing my hand around it, I found that there were hardly any adhesions. I now punctured the cyst; and about ten pints of thick steotomatous fluid flowed away through the cannula. This fluid was mixed with a thick, pasty, fatty substance, which obstructed the cannula. I now attempted to draw the cyst out; but, not succeeding, punctured it a second time, and let off about five pints more fluid. As the cyst could not even now be withdrawn, I lengthened the upper end of the incision about two inches; and, by puncturing a third cyst, then succeeded in drawing the mass out by strong vulsellum forceps. There were three points of adhesion with the omentum, which were torn through. When the tumour escaped through the incision, it dragged the uterus out with it; and examination showed that there was no connexion of the body of the uterus with its cervix. The clamp invented by Mr. Harper was now fastened on to the pedicle close to the cyst, and the latter cut off. The uterus was returned to its proper position, together with the omental adhesions; the latter having been carefully wiped, and examined for any bleeding vessels. The pedicle was now brought to the lower end of the wound; and its edges were brought together with metallic sutures, inserted about every half inch and carried deep through the aponeurosis of the muscle, but avoiding the peritoneum. It was covered with wet lint and a few long strips of adhesive plaster. A broad flannel bandage was fastened around the abdomen; and the patient was put into bed. There was no escape of the intestines at any time of the operation. It was the left ovary which was removed. The operation was finished at 3 P.M. She now had two grains of opium, and was to have a grain every six hours. Pulse 80.

10 P.M. The pulse was 90. The skin was soft and moist. She had no sickness. Half an ounce of wine was ordered. She had a little sleep at intervals during the night, but was upon the whole restless, feeling that she could not breathe freely.

February 11th, 8 A.M. The pulse was 100. She had occasional pains in the abdomen, apparently from flatus. The stomach was slightly tympanitic.

3 P.M. The pulse had risen to 140; and there was occasional hiccough. She had no pain. The belly was tympanitic; the breathing more free, and without pain; and she could straighten her legs, which she could not do the previous night.

6 P.M. She suddenly fell into collapse, and sank at 10·20 P.M., being sensible to the last.

These notes were kindly taken by Mr. Wratislaw, the visiting surgeon in charge of the case.

A further examination of the removed mass showed it to contain a large quantity of loose hairs, mixed with a thick steatomatous matter. Hairs were also developed, in various proportions, over the whole internal surface of the cyst, and in many places thickly massed together. In the centre of the cyst there was also a development of bone, and more or less perfect teeth.

On the following day, at three o'clock (seventeen hours after death), Mr. Nunn made a *post mortem* examination, there being present Messrs. B. Brown, Philip Harper, Wratislaw, and Dr. Giles. On dividing the wires used in bringing the abdominal walls together, incipient adhesions were found, as well as pus in the track of two of the wires. The omentum was a good deal discoloured, of a darkish colour, also thickened and injected, and as though clotted. The parietal peritoneum was inflamed and scarlet in patches for some distance around the incision. Peritonitis seemed to have existed chiefly on the left side, where the small intestines were slightly agglutinated together. The recto-vesical pouch contained a little bloody serum. The pouch was intensely injected. A small quantity

of cheesy matter, which was contained in the ovarian sac, appeared on one of the intestines. No pus was found. The liver was adherent to the under surface of the diaphragm. The adhesions were evidently old, and not to be broken down. The kidneys were healthy. The heart was very small, and on the right side very thin—about the eighth of an inch thick. The lungs were perfectly healthy. The os uteri was situated in its normal position, and admitted a sound for about an inch. The neck of the uterus was situated about an inch from the body, and was connected with the latter by a small impervious band of membrane. The uterus itself thus floated in the pelvis, having no direct or continuous communication with the os itself, except through this membranous band. The mammæ were well developed.

Remarks. This case is one of the greatest interest. The disease was evidently congenital, as evidenced by the bony growth; and the rapidity of its development, during the last twelve months, too clearly showed that death would soon follow. At the same time, no tapping could have relieved her, and no palliative treatment could have been of the slightest benefit. Although but little hope existed of successful result from extirpation, still it was the *only* hope; and the patient and her friends elected to run the risk—I think wisely so, because experience proves that, if there be no other organic disease, life is often prolonged or saved by extirpation. In this case, the small and weak heart evidently had a great deal to do with the death.

[*To be continued.*]

Gulstonian Lectures
ON
FEVER AND INFLAMMATION.

DELIVERED BEFORE THE
ROYAL COLLEGE OF PHYSICIANS, LONDON,
1859.

By William Addison, M.D., F.R.S., Fellow of the College.

Lecture II (*concluded*).

XIII.—Two Species of Fever.

In the last Lecture, we said that the corpuscles of the blood derive materials of their growth and nourishment from two sources, namely, the atmosphere and the plasma; and that their excretions are discharged in two ways—partly into the atmosphere, as carbonic acid, and partly into the plasma. It follows necessarily that the blood-corpuscles may be disordered in two ways; namely, by injurious matter in the air, and by injurious matter in the plasma. Wherefore, if fever be the expression of disorder in the corpuscles of the blood, we should expect—because they may be injured in two ways—two forms of fever. And there are two forms of fever, designated respectively contagious and hectic fever. Having discussed the phenomena of contagious fever, we have now to speak of hectic fever.

The corpuscles of the blood, in common with other cellular bodies, have within certain limits a power of resistance against injurious agents. It is not every passing impurity of the atmosphere, nor every injurious change of quality of the plasma, that establishes symptoms of fever. Nevertheless, poisonous substances in the air do, we know, occasion contagious fever; and we propose to show that a sufficient debasement of the qualities of the plasma, by disordering the corpuscles, will produce hectic fever.

In necrosis of bone, it has been shown for what purpose inflammation arises; and why it fails, or is hindered of cure. The persistence of the hindering cause—the dead bone—gives chronicity or permanence to suppuration, ulceration, and fistulous openings in the flesh. It is notorious in these cases, and in the analogous ones of diseased joints, that hectic fever sooner or later appears; and the sooner, if the person with his permanent source of illness (the chronic suppuration), be also exposed to privations, hardships, or unwholesomeness of food. Again, in pulmonary consumption, where the blood is continually passing and repassing numerous places of suppuration, hectic fever appears. Numerous other examples might be given; but these are sufficient to show that protracted forms of inflammation—namely, chronic suppurations and ulcerations—are in some way antecedents of hectic fever. Now, when inflammation, suppuration, and ulceration are hindered and protracted, spoiled material from the places of suppuration may ebb back by the roots of the veins into the plasma.

In proof of this, we may refer to the great work of Rokitansky, his *Pathological Anatomy;* and we shall quote the thirtieth experiment related in the third series of our own experimental researches.

"Experiment 30. Select a small light coloured frog, with as few pigment-spots as possible, because these obscure what is going on in the vessels. Irritate the web of one of the feet by immersion in tepid water (97° Fahr.) for thirty seconds, and afterwards gently scratch it with the point of a needle, taking care not to wound or open any of the blood-vessels. At the expiration of an hour or two, upon examining with a microscope, several of the capillaries and small veins will be seen crowded with colourless corpuscles. Now let a weak solution of potash—one part of the alkali to three of water—be lightly brushed over the web with a camel's-hair pencil, immersing the foot in cold water immediately after. In blood-vessels thus treated, we have seen red corpuscles glued together, and lumps of colourless matter passing away from the sphere of irritation along the widening channels of the small veins. Or these morbid matters, becoming stationary, have been the means of dividing the current of the blood into two streamlets within the vessels."

Such an experiment as this proves that local changes in the qualities of blood may be produced in places of irritation; and if in places of irritation, then also in places of inflammation and suppuration. And it shows, we think, in a satisfactory manner, how the mass of the plasma may become distempered by any continual ebbing back of spoiled material from places of protracted suppuration.

No one can doubt that the fluid of the blood is altered, and may be distempered, by unwholesomeness of diet, and by neglect of the daily excretions by the skin, bowels, and kidneys. It is also evident that these common sources of distemperature of the fluid of the blood must operate not only in persons in health, but also in persons who may be afflicted with chronic forms of inflammation, such as are present in necrosis of bone, in diseased joints, pulmonary consumption, etc. And if, in these last mentioned examples, distemperature of the fluid of the blood from errors in diet, or other such causes, concur with distemperature from absorption of spoiled matter from places of chronic suppuration, then there will be *deuteropathy of the plasma*, or disturbance of the qualities of the fluid of the blood from two points at the same time; namely, unwholesomeness of food and absorption of morbid matter. And it follows from the physiological relations subsisting between the corpuscles and the fluid of the blood, that an increasing debasement of the qualities of the fluid *must* at length disorder the corpuscles.

But one of the chief points we have been arguing for, is the therapeutical relations of inflammation to the fluid of the blood. We have said that suppuration is a means whereby injurious matter is eliminated from the plasma; that granulations and pus may perform the office of a depurating organ vicariously. Now we are saying that chronic suppuration and ulceration will occasion deuteropathy of the plasma, and thereby fever. This seems an incongruity. A little consideration, however, will show that it is only seeming incongruity. Diet sustains life and health only by measure; it is pathological in excess and by deficiency. Heat or temperature contributes to life and health only by measure. Oxygen, an essential constituent of the atmosphere, is an element of health and life only by measure; any great variation from a mean amount is pathogenetic. Too much or too little would equally occasion disturbance of health.

So likewise of the matters we are discussing: the process of repair in the commonest injuries has its pathological as well as its therapeutical aspects. The reaction upon which cure depends may be too much, or too little, or too long about. Granulations may be languid, or indolent, or deficient; or they may luxuriate, and usurp the place of fibrous tissue when fibrous tissue is needed for reparation. And fibrous tissue may hold its ground when osseous tissue is demanded for cure. This is sometimes the case in fractured bones. In ordinary contusions, great swellings appear and disappear. In their appearance, matter from the plasma of the blood must have become stationary in the part. In their disappearance, this matter must have been absorbed again into the blood. There must be, therefore, in these cases, in some way or other, a ready passage for elements from the injured tissue into the fluid of the blood.

Analogously, inflammation, as a depurative reaction in distemperatures of the fluid of the blood, may be hindered and interfered with in various ways. There may be too much or

too little of it; and certainly it is very often protracted by the persistence of the blood-distempering causes. If, then, there be a ready passage—to and fro, as it were—between the fluid of the blood and the common tissue, it is not difficult to perceive that interference and hindrances may interrupt, or even reverse, the action in this particular.

The ordinary process of repair, then, has a double aspect; and so, also, has inflammation. And our argument is, that protraction or chronicity in either of them introduces the liability to absorption of spoiled material, and that thus therapeutical reactions may operate retroversely and pathologically upon both parts of the blood; the fluid first, and then the corpuscles.

But, that we may give an outline of the argument as it relates to hectic fever, we take as examples necrosis of bone, gout, and scurvy; and, in contrast with these, scarlet fever.

Necrosis of bone produces inflammation. There are hindrances to the removal of the dead bone; therefore inflammation passes into protracted suppuration and ulceration. These gradually weaken the patient; they disable him from taking exercise; digestion is impaired; and the functions of the depurating organs are disturbed.

This is one source of distemperature of the plasma. Distemperature of the plasma aggravates the existing inflammation; but the antecedent—the dead bone—cannot, in the case we are contemplating, be removed. Therefore disorder must proceed, until at length, from the places of suppuration, morbid matter ebbs back into the circulation; and the plasma, thereby thoroughly disordered, reacts upon and disorders the corpuscles, and hectic fever, more or less, appears. Upon this interpretation of the sequence of events between dead bone and fever, to cure the fever the blood-corpuscles must be relieved from their disorder; to relieve them, the qualities of the plasma must be improved; to amend the qualities of the plasma, the chronic suppuration must cease; and that chronic suppuration may cease, the dead bone must be taken away. We all know that the effectual removal of the dead bone will cure the fever.

Errors in diet by excess produce distemperature of the plasma. And if the depurating organs, or some of them, fail in removing the distemperature, inflammation arises. In gout, the patient is surrounded with every comfort. The error in diet is most probably one of excess; it can, therefore, be easily interdicted; the antecedent can be readily removed; and, by medicine, the depurating organs can be stimulated to a more active working. For these reasons, distemperature of the plasma is concluded to be simple; its qualities are disordered from manageable sources, which may be attacked and abolished before disorder is communicated to the corpuscles. Inflammation in gout is, therefore, acute, and without fever.

On the other hand, in scurvy, the errors in diet are those of deficiency or unwholesomeness, and are much more difficult to deal with, especially where persons are crowded together in unhealthy localities, or limited to camps or ships. The individuals are poor, or, from other circumstances, cannot command the necessaries of life. Therefore, forms of inflammation, which in the rich are simple and acute, are here (or in the poor) chronic, and pass on to suppuration and ulceration, as in the sailors before mentioned, whose bare legs and feet were bitten by mosquitoes; upon which example we observed, that, because the unwholesome diet and confinement could not be changed, therefore the bitten parts passed into chronic ulcers. And if, in persons thus situated, with forms of chronic ulceration from continued unwholesomeness of diet, or other privations, morbid matter should be continually ebbing back into the circulation from places of chronic ulceration, the elements of fever, from a double debasement of the plasma, would exist; and fever thus arising would obviously be different from fever arising through miasms in the air.

In scarlet fever, it is concluded, from premises which have been argued, that disorder of the blood begins, not with the plasma, but in the corpuscles. The illness commences, not with forms of inflammation, but with symptoms of fever. There has been no error in diet: a miasmatous air has acted on the blood; a specific poison is generated; and the plasma is distempered posteriorly to disorder of the corpuscles. But (here as in small-pox) no natural depurating organ seems adapted for the removal of the poison of scarlet fever from the plasma; therefore, inflammation arises—that is to say, reactions between the plasma and the common tissue. The forms, amount, and duration of inflammation in scarlet fever, indicate the amount and severity of the disorder of the blood. Without these reactions, the patient would die from a poison shut up in the blood; with them, in their severest forms, there is a battling for life. When a joint has been crushed, death would take place from mortification, were there no reaction; but, this established, the patient is saved from the first and most pressing danger, though afterwards he has to pass the ordeal of inflammation, abscess, suppuration, ulceration, and very probably hectic fever too, as best he can, or suffer amputation for a chance of life. In scarlet fever, to cure the inflammation, the plasma must be freed from poisonous matter; and no more must enter it. That no more may enter it, the corpuscles must cease to generate and excrete a poison. Now, from the course observed in normal cases of an exanthematous fever, we may probably conclude that the corpuscles pass through their disorder in from four to six or eight days. When their disorder has passed, no more poisonous matter is discharged from them into the plasma; and, no more poisonous matter mingling with the plasma, the inflammatory reactions and the natural depurating organs together succeed in restoring the plasma to its natural state; whereupon, the blood regaining its normal constitution, inflammation comes to an end, and the patient is cured. The pathological and therapeutical sequences are the same as in small pox.

In the midst of these therapeutical actions and reactions for the depuration of the blood in fever, it would seem that a depurating organ is sometimes coerced, as it were, to an increased and incongruous working; matter not naturally found in the secretion of the organ appearing in it at the crisis of the fever. In the performance of this enforced duty—the elimination of poisonous matter from the plasma—the parenchymatous elements of the organ may be overtasked and injured. Thus, in scarlet fever, the poison in the blood sometimes occasions parenchymatous disease of the kidneys; and, in such cases, there is evidence also of inflammatory reactions in the common tissue of the organ. This complication may have the same reflex effect upon the blood as chronic ulcerations. Spoiled material from the overburthened kidneys may ebb back into the circulation; and a new blood-distemper may be inaugurated from elements of urine retained in the plasma. Such being the case, there would be present the antecedent of a second or reactionary fever; namely, deuteropathy of the plasma—that is to say, distemperature—from disease of the kidneys, superposed upon the remnant of the poison of scarlet fever. And it is in perfect accordance with the argument, that a secondary fever from disease of the kidneys should be more apt to appear as a consequent of the primary fever, where the inflammatory reactions in the skin are too slight or insufficient for the full and effectual discharge of the poison. But it is to be observed, that the second fever is not a relapse or reappearance of the first; it is another fever of different origin. The first fever was occasioned by an aerial miasm; the second is occasioned by a debasement of the plasma acting injuriously on the corpuscles of the blood.

Let us, in concluding this lecture, give a brief summary of the facts and of the arguments.

In necrosis of bone, the pathological series begins with dead bone. If this cannot be taken away, it ends with fever, from deuteropathy of the plasma disordering the corpuscles of the blood.

In pulmonary consumption, the pathological series begins with tubercles in the lung. There are hindrances and difficulties in their discharge: suppuration is made chronic; and the phenomena end with fever from deuteropathy of the plasma.

In scurvy, the series begins with unwholesomeness or deficiency in diet, or other privations which cannot be changed. Ulcerations arise; and the series may end with fever, from deuteropathy of the plasma.

In these examples—namely, hectic fevers—disorder of the blood-corpuscles is posterior to a debasement of the fluid in which they swim; and forms of inflammation, protracted for longer or shorter periods, precede the fever.

On the other hand, in the contagious primary fevers, the pathological series begins with disorder of the corpuscles. It ends with forms of inflammation; because distemperature of the fluid of the blood is, in these fevers, posterior to disorder of the corpuscles. Thus we interpret the relations of fever to inflammation, and of inflammation to fever, by the difference between the two parts of the blood. The facts are, that sometimes fever precedes inflammation, sometimes forms of inflammation precede fever; because sometimes (from aërial poisons) the corpuscles are disordered before the plasma; and sometimes (from unwholesome diet, privations, and chronic ulcerations) the plasma is disordered before the corpuscles. If you accept these interpretations, the whole subject of repair, in-

flammation, and fever, presents a coherency which is worthy of your attention. Thus:

Mechanical objects injure the common tissue; and the process of repair arises.

Errors in diet disorder the plasma; and inflammation appears.

Miasms in the air affect the corpuscles of blood; and primary fever is the result.

Both the process of repair and inflammation, from hindrances and difficulties, may pass into chronic or protracted forms of suppuration, ulceration, and discharges; whereupon, if spoiled material should enter the circulation, and, by reiteration or quantity, thoroughly debase the plasma, the corpuscles suffer, and fever appears; namely, reactionary, hectic, or a plasma fever.

A Course of Lectures
ON
URINE, URINARY DEPOSITS, AND CALCULI.

DELIVERED AT THE PATHOLOGICAL LABORATORY, DURING THE SESSION 1857-58.

BY

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LECTURE II.

Healthy Urine. I. VOLATILE CONSTITUENTS. II. ORGANIC CONSTITUENTS. III. INORGANIC CONSTITUENTS.—VOLATILE CONSTITUENTS: *Water; Carbonic Acid; Peculiar Organic Acids; Ammonia and Ammoniacal Salts.*—ORGANIC CONSTITUENTS: *Urea; Quantity; Characters; Circumstances affecting the Formation of Urea; Origin: Creatine: Creatinine: Guanine: Sarcine: Inosite: Uric Acid; Quantity; Detection; Mode of Formation: Urates: Hippuric Acid: Extractive Matters: Mucus: Lactic Acid and Lactates.*

[*Concluded from page* 386.]

Creatine exists in small quantity in urine. Its presence in this secretion was discovered by Heintz. Dr. Thudichum has obtained from 3·45 to 6·32 grains of creatine from the urine of a healthy man in twenty-four hours. Creatine has a pungent taste, is very soluble in hot water, but requires about seventy-five parts of cold water for its solution. It is very slightly soluble in alcohol, and quite insoluble in ether. It crystallises in right rectangular prisms and rhomboidal crystals. (*Illustrations of Urine*, Pl. VII, Fig. 3.) By being boiled with baryta water, it is converted into urea and sarcosine; with strong acids, into creatinine.

Creatine may be obtained from urine by the following process, proposed by Liebig. Lime water and chloride of calcium are first added to the urine, which is then filtered and concentrated by evaporation, in order to remove most of the salts. The liquid from which the salts have been separated is decomposed with one-twenty-fourth of its weight of a syrupy solution of chloride of zinc. After the lapse of some days, a number of round granules make their appearance. These consist of chloride of zinc and creatinine, with which creatine is mixed. (*Illustrations of Urine*, Pl. VII, Figs. 1 and 2.) They are dissolved in hot water, and treated with hydrated oxide of lead until the reaction is alkaline. The oxide of zinc and chloride of lead are to be removed by filtration; and, after being decolorised by animal charcoal, the solution is evaporated to dryness. The residue is to be treated with boiling alcohol, which dissolves the creatinine very readily, but leaves the creatine, which may be recrystallised by solution in hot water.

Creatine is obtained from all kinds of lean meat, but exists in larger proportion in that of mammalia than in birds, reptiles, and fishes. Gregory obtained ·14 from 100 parts of bullocks' heart, ·08 in 100 parts of pigeons' flesh, and ·06 in the same quantity of the flesh of the skate. Although the flesh of fishes contains less creatine than that of the higher animals, it is more favourable for extraction. I obtained more than seventeen grains of creatine from two pounds of the flesh of the crocodile. The presence of creatine has been detected in the blood by Verdeil and Marcet. Traces of it have been discovered in the amniotic fluid.

Its existence in the juice of muscular tissue, and its presence in the urine, would lead to the conclusion that creatine was one of the nitrogenised products resulting from the disintegration of muscular tissue; and such a view of its nature is supported by the readiness with which it is decomposed into urea, creatinine, and sarcosine. It is found in greater quantity in muscles which have been in active exercise during life, than in those which have been quiescent. The heart yields a large quantity; and more is found in animals which have been hunted to death, than in those destroyed without being subjected to violent exercise. Creatine may, like urea, be regarded as an excrementitious substance.

Creatinine is also crystalline. The crystals take the form of right rectangular prisms, according to Robin and Verdeil. It has a strongly alkaline reaction, and is soluble in water. It is very soluble in warm alcohol. It combines with different acids to form salts. With chloride of zinc, a crystalline compound is formed, composed of roundish wart-like masses, made up of minute radiating crystals, which have been already referred to.

Creatinine is found in the urine in larger proportion than creatine, and must be considered as an excrementitious substance. It is not destroyed in the decomposition of urine, while the creatine undergoes conversion into creatinine. Dr. Thudichum obtained as much as from five and a half to nearly ten grains of creatinine from the urine of a healthy man in twenty-four hours.

Guanine, Sarcine, Inosite. Strahl and Lieberkühn have discovered a substance in urine which they considered to be xanthine, but which, from its behaviour with reagents, may probably be regarded as guanine. Strecker has detected in urine a substance closely resembling sarcine, found in muscular fibre; but its exact nature is at present doubtful. Inosite has been found in the urine of a man suffering from Bright's disease by Cloëtta, but it has not yet been detected in healthy urine.

Uric Acid. The organic constituent of the urine which ranks next in importance to urea is uric or lithic acid. In healthy urine, its presence cannot be detected, unless a small quantity of a stronger acid, as nitric or hydrochloric, be first added to decompose the soluble urates. After the mixture has been allowed to stand for some time, the uric acid separates in the form of small red crystalline grains, which adhere to the sides of the glass vessel. Upon microscopical examination, these are found sometimes to be composed of separate crystals, and sometimes of small stellate groups; the individual crystals varying in form from the lozenge-shape to that of an elongated crystal with sharply pointed extremities. (*Illustrations*, Pl. IV, Figs. 2, 3, 4, and 5.) Uric acid is a very weak acid, and is perfectly separated from its salts by acetic acid. It is soluble in solutions of alkaline lactates, acetates, carbonates, phosphates, and borates. Uric acid has the power of decomposing the alkaline phosphates. It takes a part of the base, forming a urate, and leaves an acid phosphate, as I mentioned when speaking of the acid reaction of urine. The colour of the crystals of uric acid which have been obtained from urine is derived from the proper colouring matters of the secretion, and must, therefore, be regarded as an impurity. It can easily be obtained perfectly pure and colourless; and, in three or four instances, I have observed perfectly colourless crystals of this substance, which have separated spontaneously from urine holding in solution scarcely a trace of colouring matter.

Pure uric acid crystallises in the form of very thin rhomboidal laminæ; but the sides of the crystals, instead of being perfectly straight, are usually more or less curved. The angles, again, are often rounded, so that the crystal has an oval form. In Plate IV, Figs. 2 and 5, and Plate V, Fig. 7, of the *Illustrations*, some pure crystals of uric acid are represented. Some of these crystals were obtained by the addition of acid to the solution. Although uric acid may be perfectly pure, the crystals vary much in size and form. Experiments show what very slight variations in the conditions under which they are produced are sufficient to determine great alterations in the form of the crystal.

Quantity. Healthy urine contains from half a grain to a grain of uric acid in 1,000 grains of urine. The solid matter contains about 1·3 per cent. of this substance, and probably from five to eight grains are excreted by a healthy adult man in twenty-four hours. Dr. Thudichum gives the latter as the average quantity.

Detection. The chemical characters of uric acid are well marked.

1. If to a deposit consisting of uric acid, placed on a glass slide, a drop of nitric acid be added, a brisk effervescence en-

sues; and when the mixture is slowly evaporated over a lamp, a reddish residue is left. Upon the addition of a drop of ammonia, a rich purple tint is produced, owing to the formation of murexide, the so called purpurate of ammonia. This test is exceedingly delicate: it was first applied by Dr. Prout. One other substance possesses a similar reaction, and this is caffeine; but uric acid is at once distinguished from it by its microscopical characters.

2. The deposit suspected to contain uric acid or a urate may be dissolved in a drop of solution of potash, in which it is very soluble. Upon adding excess of acetic acid, and leaving the mixture for some hours, small crystals of uric acid will form. These may be recognised by their microscopical characters.

3. Uric acid may be detected in animal fluids, when mere traces of this substance or of urates are present, by a plan proposed by Dr. Garrod. The fluid suspected to contain the urate is treated with a few drops of strong acetic acid (glacial acetic acid is best) in a watch-glass. A few filaments of tow or very thin silk are placed in the mixture, and the whole set aside under a glass shade, in a warm place, for twenty-four or forty-eight hours. Gradually uric acid crystals are separated, and deposited upon the filaments. Their characters may be recognised by microscopical examination. Some crystals of uric acid upon a hair are represented in Plate xxi, Fig. 6, of the *Illustrations*.

The quantity of uric acid is estimated by collecting the crystals separated by the addition of an acid, and weighing them after they have been carefully washed and dried. Dr. Thudichum recommends the use of nitric acid, because the uric acid is less soluble in it, and there is not so much tendency to the development of fungi as if hydrochloric be employed.

Mode of Formation. Uric acid is found in the urine of most carnivorous animals, and in that of young herbivora while sucking, and therefore feeding upon a diet rich in nitrogen. It is not found in the urine of the pachydermata, not even in that of the omnivorous pig. It is abundant in the urine of birds, and is found in that of many reptiles and insects. Uric acid exists in the blood, and is only *separated* from that fluid by the kidneys. Dr. Garrod has detected it in the blood of men in health, and in cases of gout in considerable quantity. In such instances, uric acid crystals may be separated from the fluid obtained from a blister, according to the plan I just described. It has been detected in the juice of the spleen in considerable quantity by Scherer, but Mr. Gray has failed to confirm these observations. Cloëtta has found it in the pulmonary tissue of bullocks' lungs, associated with taurine, inosite, and leucine.

Uric acid is one of the products resulting from the disintegration of albuminous tissues. Prout held "that a very large proportion of the urate of ammonia found in the urine on common occasions appears to be developed from the imperfect albuminous matters formed during the assimilating processes". This is rendered probable by the researches of later observers, especially by those of Bidder and Schmidt. In the healthy organism, it is probable that the greater quantity of the uric acid formed is soon afterwards further oxidised and converted into other compounds, especially urea; but, in certain conditions of the system, these changes do not take place to the full extent, or a much larger proportion of uric acid is formed. In either case, this substance exists in largely increased quantity in the blood. It is deposited, in combination with soda and lime, in various structures. It may accumulate beneath the skin, so as to form large collections, which are familiar to us under the name of chalk-stones. It is curious that these depositions should take place in areolar tissue, in white fibrous tissue, and in connexion with cartilage. Perhaps this may be connected with the very slight vascularity of these tissues; and it must be borne in mind that the deposits usually occur at a time of life when they are fully formed, after which they probably undergo very slight changes, and the processes concerned in their decay and regeneration are slowly, and perhaps, in sedentary persons, very imperfectly carried on. All these circumstances would favour the separation of a slightly soluble substance from the blood, and its deposition in an insoluble state. Lehmann has shown that, after attacks of disturbed digestion, the proportion of uric acid in the urine becomes increased. Alcoholic liquors seem to have the same effect. In normal conditions of the system, the urine contains about 1 part of uric acid to 28 or 30 parts of urea; but, under the circumstances just mentioned, the ratio becomes 1 to 23 or 26. This increased proportion of uric acid appears to be formed in consequence of the usual proportion not being converted into urea. In all cases where imperfect oxidation takes place in the organism, the quantity of uric acid excreted in the urine undergoes an increase. Alcohol causes a diminution in the quantity of carbonic acid exhaled; and, in such cases, an increased proportion of uric acid, urates, and usually oxalates, is found in the urine.

A highly nitrogenised diet, with insufficient exercise—confinement in ill-ventilated rooms—all circumstances interfering with the healthy action of the respiratory apparatus—or preventing the proper amount of blood being carried to the pulmonary surface, active exercise in confined air, etc.,—are conditions favourable to the formation of an increased quantity of uric acid and urates. The formation of urea and oxalic acid from uric acid in the organism, or artificially by the action of peroxide of lead, has been previously alluded to. Ranke has shown that, at a high temperature, in the presence of yeast and an alkali, uric acid also becomes converted into urea and oxalic acid.

Urates. Uric acid is separated from the blood by the kidneys, in the form of a urate, which is readily soluble in water. After its separation, however, this salt may soon undergo decomposition, and insoluble uric acid will be deposited. In the majority of cases, this decomposition does not take place until after the urine has left the bladder; but sometimes it occurs in the bladder itself. The causes of the precipitation of uric acid are well worthy of attentive study, as they are intimately connected with the formation of uric acid calculi. The quantity of urates in healthy urine is very small, but not unfrequently enough is present to form a very abundant deposit after the urine has been allowed to stand for some time. I propose to describe the characters, and allude to the composition, of these salts, when we consider the subject of urinary deposits.

Hippuric Acid was first detected in horses' urine by Liebig, and was proved by him to exist in healthy human urine in small quantity—a statement which has been confirmed by Lehmann, and recently by Kühne and Hallwachs. It is not found in the urine of carnivorous animals, but among herbivora it occurs in considerable quantity. It does not exist in large quantity in the urine of calves while sucking, but cows' urine contains as much as 1·3 per cent. Lehmann has detected it in considerable quantity in the urine of the tortoise (*testudo græca*).

Hippuric acid is soluble in about six hundred times its weight of cold water. It is very soluble in hot water, and also in alcohol; but is insoluble in ether. It crystallises very readily in various forms, which are derived from the right rhombic prism. (*Illustrations of Urine*, Plate ix, Fig. 1.) It is very easily decomposed into benzoic acid, especially in the presence of extractive matters, and other constituents of the urine. In testing for this substance, the perfectly fresh urine only should be employed. It is curious that benzoic acid, when taken into the organism, is eliminated in the urine in the form of hippuric acid—a fact which was first made known by Mr. Ure.

It may be prepared by adding milk of lime to fresh cows' urine. The mixture is to be boiled for a few minutes, strained, and exactly neutralised with hydrochloric acid. The solution is next to be boiled down to one-eighth of its original bulk, and considerable excess of hydrochloric acid added, when brown crystals of the acid form. These may be purified by solution in water, through which a current of chlorine is to be transmitted, in order to decolorise the liquid. It may always be readily obtained from human urine after taking ten grains of benzoic acid.

The quantity of hippuric acid is increased when a purely vegetable diet is taken; but it is certain that the whole of the hippuric acid formed in the organism is not derived from this source. The proportion of hippuric acid in human urine was formerly considered to be so small that it was scarcely possible to make a satisfactory quantitative determination; but Hallwachs has lately shown that as much as *thirty grains* or upwards are excreted in twenty-four hours.

Very little is known with reference to the formation of hippuric acid; and, although the subject has been very carefully investigated by Kühne and Hallwachs, who have published two very elaborate memoirs, there still remains much to be discovered. These observers hold that the hippuric acid is produced from the glycocol formed in the liver. Hallwachs is led to conclude, from numerous experiments, that the production of hippuric acid is determined rather by the chemical changes going on in the organism, than by any peculiarities of the food; for, if a purely animal diet was taken, hippuric acid

was still found in the urine.* Lehmann found much hippuric acid in the urine of fever patients, and always detected it in diabetic urine.

Robin and Verdeil give drawings of some crystals which they found in the urine of a man aged 30, who took little exercise, but lived on a highly nitrogenised diet; and which they considered to be hippuric acid: a statement apparently founded upon their resemblance to crystals produced by the decomposition of hippurate of soda. They do not mention that the crystals were subjected to any chemical examination; and, in the absence of stronger evidence than mere resemblance in form, it seems to me that we are hardly justified in assuming that the crystals were composed of hippuric acid. It is very doubtful if this acid ever crystallises in urine spontaneously.

Extractive Matters. Under the head of extractive matters are included certain organic substances which have never been obtained in a state of perfect purity, which are uncrystallisable —not volatile without decomposition—and incapable of being isolated. Chemists have described several kinds of extractive matters characterised by their behaviour with solutions of acetate of lead, bichloride of mercury, tincture of galls, etc. Within the last few years, however, several bodies, formerly included under the indefinite term of extractive matters, have been separated, and their chemical properties accurately determined. As instances, I need only mention albuminate of soda, binoxide and teroxide of protein, creatin and creatinine, hippuric acid, lactic acid and lactates, and certain colouring matters. The extractive matters in urine are entirely excrementitious; but it seems most probable that those present in the blood represent a certain stage of the metamorphosis of some of the constituents of that fluid—either a state intermediate between the nutritive pabulum and the tissue into which it is to be converted (progressive metamorphosis or histogenesis), or a condition resulting from the disintegration of tissue previous to its elimination from the body in the form of urea, creatine, uric acid, etc. (regressive metamorphosis or histolysis). The extractive matters of urine may be divided into three kinds.

Water Extract. The first is called water extract, because it is insoluble in absolute alcohol, and in spirit of specific gravity ·833, but is soluble in water. It exists only in small quantity. Infusion of galls and bichloride of mercury produce scarcely any effect upon it, but neutral and basic acetates of lead give copious precipitates.

Spirit Extract. The second kind of extractive matter is termed spirit extract, because it is insoluble in absolute alcohol, but soluble in water, and in spirit ·833. It contains much chloride of sodium. The solution of this extract is unaffected by infusion of galls, bichloride of mercury, and neutral acetate of lead; but a bulky precipitate is caused by basic acetate of lead.

Alcohol Extract. The alcohol extract is soluble in water, in spirit ·833, and also in absolute alcohol. Its chemical reaction appears to be very similar to the last.

These are the extractive matters which are met with in healthy urine. In certain diseases, however, extractives drain off from the blood, and sometimes in very large quantity, which are not present in a state of health. My friend Dr. G. O. Rees many years since showed that this extractive could be detected in morbid urine by adding tincture of galls; and that the proportion varied greatly in different cases. Healthy urine is scarcely affected by tincture of galls, but this blood-extractive is at once precipitated by it. In order to detect it, tincture of galls is to be added to the filtered fluid; and, if this extractive is present, a precipitate is *at once* produced. Should the urine contain albumen, this must, in the first instance, be separated by boiling and filtration. It is only the precipitate which *immediately* follows the addition of the tincture of galls that must be noticed. In some cases, the extractive drains away from the blood, without the escape of albumen. (Lettsomian Lectures, by G. O. Rees, M.D., F.R.S.; *Medical Gazette*, 1851.) I shall have occasion to recur again to this interesting subject, when discussing the characters of the urine in disease.

One thousand grains of healthy urine will contain from fifteen to twenty grains of extractive matters. The solid matter contains from 15 to 40 per cent. of these substances.

The physiological importance of extractive matters is quite unknown, and hitherto no one has been able to ascertain their nature or discover the part which they play in the animal economy. Their presence in the blood, and in all the animal fluids, as well as in the solid organs and in the excretions, clearly prove them to be substances of great importance; and it must be remembered that, in the urine, the proportion of extractive matter is often greater than that of the urea itself. The amount of extractive matters in the different fluids and secretions of the body is a subject well worthy of investigation, and likely to yield valuable results.

Vesical Mucus. Vesical mucus exists in very small quantity in healthy urine. It forms a faint flocculent cloud, which settles towards the lower part of the fluid, after the specimen has been allowed to stand for some time. Under the microscope, it is seen to consist of granules, with a little epithelial *débris*, nuclei, and a few imperfectly formed epithelial cells. I shall have to allude to the nature of the so-called mucus-corpuscle when speaking of pus.

Lactic Acid. Lactic acid is not constantly present in healthy urine in quantities sufficient to be recognised; but sometimes it is found in the urine of persons who may be considered to be in tolerably good health. Liebig denied its existence in healthy urine altogether; but its presence in this fluid—at least, under certain physiological conditions, as stated many years ago by Berzelius—has been confirmed by Franz Simon, Lehmann, and others: although, on the other hand, it appears nearly certain that the salt assumed to be lactate of zinc by many observers was not really of this nature, but probably consisted of a combination of another acid, which, unlike lactic acid, contains nitrogen.

In order to ascertain the presence of lactic acid, a baryta salt should be first prepared, as Lehmann has recommended, from which a lime salt is easily formed by the addition of sulphate of lime. The lactate of lime crystallises in double brushes, as seen by the microscope. From the lime salt a copper salt is prepared by the addition of sulphate of copper. (*The Microscope, in its Application to Clinical Medicine*, 2nd edit., Figs. 123, 124, p. 123.) This is examined by the microscope. The lactate of copper is decomposed by placing a small bar of zinc in the solution; and upon this, in a short time, crystals of lactate of zinc are deposited, whose angles may be measured in the microscope. (*The Microscope*, etc., 2nd edit., Fig. 125, p. 123.) For the details of this process, I must refer to Lehmann's *Physiological Chemistry*, translated by Day, vol. i, p. 91.

According to some observers, the phosphate of lime and the ammoniaco-magnesian phosphate are held in solution by the lactic acid. They may also be dissolved by the chloride of ammonia, according to Dr. G. O. Rees. MM. Cass and Henry have endeavoured to prove that the lactic acid exists in the form of lactate of urea. Lactates of soda and ammonia are also most probably present in the majority of cases. Lactic acid is occasionally met with in urine; and I have already referred to some other organic acids which are sometimes found.

Before we discuss the characters of the saline constituents of healthy urine, it is desirable to consider how a specimen of urine may be systematically examined.

Systematic Qualitative or Quantitative Analysis of Healthy Urine: Organic Constituents.

1. In the first place, the reaction and specific gravity of the specimen are to be taken, and any general points noticed. (Lecture I.)

2. Two portions of urine (500 or 1,000 grains) are to be placed in separate porcelain capsules, and evaporated to dryness with the cautions previously given. In the first portion, A, the *organic constituents* are to be estimated; in the second, B, the proportion of *salts* is to be ascertained.* A, when dry, is to be weighed; and thus the quantity of *water* is obtained. The residue is known to be quite dry when *two successive* weighings exactly correspond. The solid matter is to be treated with successive portions of boiling alcohol, until nothing more is taken up. These are decanted into another basin, or passed through a filter; and the alcoholic solution, containing urea and extractives, is to be evaporated nearly to dryness—alcohol extract—C; the residue insoluble in alcohol—D.

C. The alcohol extract is to be treated with a few drops of water, and placed over the water-bath. Crystals of oxalic acid are to be added until they are no longer dissolved. It is important to add *excess* of oxalic acid crystals. The mixture is allowed to cool, and the impure crystals of oxalate of urea and excess of oxalic acid are to be slightly washed with ice-cold water, and pressed between folds of bibulous paper, to absorb

* An excellent review of these researches will be found in vol. xlv, p. 156, of the "Medico-Chirurgical Review".

* B will be examined in Lecture III.

the extractive matters. The crystals are to be redissolved in a small quantity of water, placed in a large vessel, and carbonate of lime added until effervescence has entirely ceased. After the mixture has been allowed to stand for some time, it is to be thrown upon a filter.

The solution separated from the oxalate of lime consists of *urea*, with a little colouring matter. It is to be carefully evaporated to dryness, and weighed. If the residue is not entirely soluble in alcohol, it contains impurity which must be deducted from the weight of the urea.

Or, the alcohol extract, C, may be treated with a few drops of water, so as to form a thick syrup; and nitric acid added by drops, while the basin which contains the extract is plunged in a freezing mixture. When sufficient nitric acid has been added to combine with all the urea present, the whole is to be allowed to stand for some time; the crystals carefully washed with a very little ice-cold water, and carefully placed on a porous tile, which will absorb the excess of nitric acid the extractive matters, leaving crystals of *nitrate of urea*, which are to be carefully dried and weighed. By a simple calculation, the quantity of urea is easily ascertained.

D. The residue insoluble in alcohol is to be treated with boiling water, and thrown upon a filter. There remain upon the filter, *mucus* from the bladder and other parts of the urinary mucous membrane; *uric acid; phosphate of lime;* and *ammoniaco-magnesian phosphate*, with a mere trace of *silica*. This residue is to be carefully dried and weighed. It is then to be incinerated; and, after the ash has been completely decarbonised, its weight is to be deducted from that of the residue insoluble in alcohol; and thus the proportion of uric acid and vesical mucus is ascertained. By deducting the united weight of all these different substances—urea, uric acid, mucus, and earthy phosphate—from the solid matter, we calculate the quantity of extractive matter present. According to this plan, we have ascertained the proportion of the following constituents in 500 or 1,000 grains of urine.

Water .....
Solid matter.....
Urea .....
Extractive matters .....
Mucus and uric acid .....
Earthy phosphate and silica .....
Fixed salts .....

Many of the processes above described are imperfect, and likely to give results which are not quite accurate; still the plan is one which is practically useful, and, when a series of results is required, answers very well. In the analysis of animal fluids, it is impossible to attain to perfect accuracy, owing to the changes taking place in the ingredients of the fluid, which are produced by the analytical processes to which they are subjected. Moreover, in such inquiries, it is far more desirable to know the general change which takes place, under various circumstances, in the quantities of the different constituents, than to be acquainted with the exact absolute proportion of each present. In a future lecture, I shall allude to the *volumetric analysis* of healthy urine, which can be more quickly performed, but, at the same time, does not yield perfectly accurate results. (See also *Archives of Medicine*, No. 1, p. 34.)

Periscope.

EPIDEMIOLOGY, HYGIENICS, AND STATISTICS.

PRISON DIETARY.

DR. EDWARD SMITH has published in the *Transactions of the Association for the Promotion of Social Science* for 1858, and in the *Dublin Quarterly Journal of Medical Science* for May 1859, some important observations on the diet of the inmates of prisons.

In the English gaols, there is a different dietary for county prisoners and for convicts, the latter being usually much in excess of the former. The government has provided a scheme for county prisoners, but has not compelled the magistrates to adopt it; so that, in one-half of these gaols, there is still no uniform scheme of dietary. The author's attention has been chiefly directed to the government scheme, and he considers it to be based upon wrong principles, and unjust in its details. Increase of food with duration of imprisonment is unnecessary, provided the prisoners are supplied with sufficient food from the commencement. Variation in the quantity of nutriment from day to day (the conditions being unchanged) is absurd; and the allowance of one pint of soup per week, as a distinction between no labour and hard labour, is manifestly ridiculous.

The chief defects in the existing scheme are, the deficiency of food in short, and excess of food in long imprisonments; and the apportionment of one, and that an insufficient, amount of food to all kinds of hard labour. It is upon these two points that Dr. Smith has prosecuted a series of experiments.

In the existing scheme, the amount of food supplied varies through five classes from one pound of bread and four ounces of oatmeal daily for the shortest sentences, to twenty-two ounces of bread and one pound of potatoes daily, four ounces of oatmeal four times and two ounces thrice per week, a pint of cocoa thrice per week, with four ounces of cooked meat without bone four times, and three ounces thrice per week, in the sentences of four months and upwards.

Dr. Smith adopts the dictum of Sir James Graham, in his letter of instructions to the Commissioners, that the dietary shall not be made an instrument of punishment; and proceeds to state what is the true amount of food required under different circumstances. He discards the basis of duration of imprisonment, and adopts that of the degree of labour enforced. He suggests that four classes should be established—1. For all cases without labour; 2. Those with light labour, as in ordinary manufactures and trades; 3. In the heavy manufactures, as weaving wide widths of cocoa-matting, and with the use of the lighter cranks and the shot-drill; and 4. With the full pressure of the crank and the treadwheel labour.

In the first classes, he has found, as the result of eight experiments, that eight ounces of carbon and two hundred grains of nitrogen are lost by the system daily (he has not yet determined the amount of hydrogen consumed); and that, in the other classes, the addition is one-fifth, three-fifths, and four-fifths of that quantity, respectively. From this he has deduced the amount of food which must be supplied to meet this waste; and, taking bread and cheese as offering a good basis for comparison, the quantities required in the four classes are as follows:—

1. In rest, twenty-three ounces of bread and two ounces and a quarter of cheese.
2. With light trades, twenty-seven ounces and a half of bread and three ounces of cheese.
3. With heavy trades and light crank labour, thirty-six ounces and three-quarters of bread and four ounces of cheese.
4. With full treadwheel and crank labour, forty-one ounces and a half of bread and four ounces and a half of cheese.

On this plan, a dietary is provided which meets the wants of each man separately, and which is adapted to every prison, notwithstanding the extraordinary diversity which, in a former paper, printed in the *Transactions of the Association for the Promotion of Social Science*, and in the *Philanthropist*, 1858, he has proved to exist in prison discipline.

Dr. Smith states the proportion which other ordinary articles of food bear to bread and cheese, so as to enable any one to vary the kind of food, and yet retain the due proportion of nutritive elements. This is given in the following table, chiefly compiled from Playfair's data, which shows the proportion of carbon contained in various articles of food, as compared with that in ten parts of bread, the quantity of nitrogen contained in each ounce avoirdupois, and the cost per pound at contract prices.

	Parts of various substances equal in carbon to 10 parts of fresh bread.	Nitrogen in each oz. — Grains.	Cost per lb. Oct. 1858. — s. d.
Bread		5¾	1 1-12
Wheat flour . . .	8	7¾	1½
Peas	8	15¾	1½
Rice	8	4½	1½
Oatmeal	7½	8¾	1½
Scotch barley . .	—	—	1½
Molasses	—	—	2
Meat (fresh) . .	10	8¾	4½
Cocoa	5	8¾	1 1½
Potatoe	½	1½	¾
Suet or butter . .	4½	—	
Sugar	7½	—	4½
Indian corn . . .	7½	7¾	
Cheese	8	19¼	6

This table is equally applicable to workhouse dietary.

Dr. Smith then describes the influence of certain modifying circumstances, determined in part by his own labours, and in part by the observations of Mr. Milner, surgeon to the Wakefield County Gaol, given in a paper read before the British Association, and published in the *Sanitary Review*. These are, age, sex, size, season, conformation, and employment. Mr. Milner has shown, in reference to age, that a dietary better than that of the highest class in county prisons was excessive in old age, whilst it was insufficient to maintain the due growth of the body at the age of seventeen. Persons of unusual height, and of a girth of thirty-four inches and upwards, lost weight in a rapidly increasing ratio. The duration of imprisonment had no marked influence. In reference to the waste of carbon by the treadwheel labour, Dr. Smith has proved that, with a quarter of an hour's work, the increase over that of the state of rest was more than five times; and, with alternations of work and rest during seven hours and a half, it was three times.

In reference to seasons, Dr. Smith has proved that the system is at its lowest state of vital action at the end of summer; and Mr. Milner has shown that his prisoners gain weight from May to September, and lose during the other months.

The general regulations recommended by the author, are as follows:—

1. The supply of food must meet the wants of the system.
2. Variations in quantity of nutriment with duration of imprisonment, and from day to day, are unnecessary; provided the quantity at first supplied be suited to the wants of the system.
3. Growing persons must have a sufficient excess of food to maintain the development of the system, whilst to old persons less food may be supplied. Persons of unusual size demand an increased supply of food.
4. From December to April, both inclusive, the quantity of food should be one-sixth greater than during the other months.
5. The supply must vary day by day with the labour exacted. The breakfast should be as good a meal as the dinner, and especially with hard labour; and the treadwheel should not be worked before breakfast.
6. With hard labour, the meals should not be too bulky, so as to impede respiration.
7. Other things being equal, the cheapest articles should be preferred; and hence potato should be supplied more sparingly, and peas more plentifully. Dr. Smith commends the use of unsifted flour, ground and made into bread, under efficient superintendence, in the prison.

Reviews and Notices.

Clinical Lectures on the Principles and Practice of Medicine. By John Hughes Bennett, M.D., F.R.S.E. Third Edition, with Four Hundred Illustrations on Wood. Pp. 1005. Edinburgh: Adam and Charles Black. 1859.

It is only a few months since we reviewed the second edition of this admirable work; and now we have a third edition, its bulk augmented by some fifty pages—an ample testimony to the opinion of the profession as to the sterling merit of the work.

There is but one other work on the principles and practice of medicine which can for a moment be compared with Dr. Bennett's; and that, of course, is Dr. Watson's now celebrated work. We think, however, that Dr. Bennett has one advantage over his great rival: his form is more practical, and, as we think, more likely to impress students. It does not do, it is true, to rely too much upon individual portraits of disease, if we may so term the cases given in the former work, inasmuch as no two cases are exactly alike. On the other hand, it will not do to generalise our descriptions too widely, as we may do this to such an extent that the student may not be able to diagnose a disease when he sees it. The happy medium is, we think, hit by Dr. Bennett: he first gives the general features of a disease, and then he describes two or three well marked illustrative cases. To the student of medicine this is by far the most satisfactory method. Another valuable feature in his method of teaching is, that he gives the treatment in full, even to prescriptions. This may seem to be teaching too much; but we should like to know how the young medical man, who has just left the lecture-room, is to treat disease at all, unless he have some guide to direct his unused steps. We venture to say that the few years between actual studentship and full practice form the most uncomfortable and the most unsatisfactory portion of a medical man's life; and then it is that he requires, if you will, even routine practice, until he sees and learns how to act by the bedside.

The philosophical and inquiring spirit in which this volume is written adds not the least charm to it. As Dr. Bennett well says, "Our previous impressions of the action of drugs and of various modes of the treatment have become altogether changed;" and we may add, that Dr. Bennett has not been one of the last to point out that many of our old gods are false gods; and that we must no longer rely upon precedent or tradition, but that we must apply a new system of therapeutics to a new and advanced knowledge of physiology and pathology. In this sense, this volume blows the first note of the revolution that is coming in the practice and science of medicine.

Outlines of Human Osteology. By F. O. Ward. Second Edition. Pp. 440. London: Henry Renshaw. 1859.

This little volume has for so long a time been the pocket companion of the medical student, that it requires little aid from our pen. In these days of illustrated editions, many may prefer Mr. Holden's volume on anatomy, as affording, through the means of its woodcuts, a shorter cut to a knowledge of human osteology than any other. Possibly so; but, if clearness of description, beauty of language, and philosophical thought, ought to be ingredients in a book for students, we can say confidently that no book ever published on this subject at all approaches this volume by Mr. Ward, which is now presented to the profession in a new and improved form.

A System of Dental Surgery. By John Tomes, F.R.S. With 208 Illustrations. London: John Churchill, New Burlington Street. 1859.

If a man could make himself a dentist simply by reading, we should say that this volume would be all that was necessary for the student of this speciality. We have rarely met with a book which combines the theoretical with the practical more admirably than does this one; in fact, it exhausts the subject. To the very large class who practise dentistry, whether as a speciality in surgery or as a merely mechanical art, Mr. Tomes's volume will be invaluable; inasmuch as it not only gives the last word of science, but the last products of mechanical skill as regards implements connected with the subject, which have been brought to light by Continental, as well as by American and British dentists. The woodcuts are admirably executed; and the paper and type are as excellent as in the rest of Mr. Churchill's valuable manuals.

The Treatment of Obstinate Ulcers and Cutaneous Eruptions in the Leg, without Confinement. By Henry Chapman, F.R.C.S. Third Edition. Pp. 161. London: John Churchill. 1859.

This little volume has now reached a third edition, and has deservedly become popular with the profession. There are no slight surgical diseases which produce a greater amount of discomfort than obstinate ulcers; and we think Mr. Chapman has done good service in devoting a little volume specially to the subject.

Reports in Operative Surgery. Series the Third. By Richard G. H. Butcher, M.R.I.A., Surgeon to Mercer's Hospital, and Lecturer on Clinical Surgery. With numerous Illustrations. pp. 50. Dublin: M'Glashan and Gill. 1859.

This pamphlet is a reprint from the *Dublin Quarterly Journal of Medical Science* for February 1859, and contains an account of some interesting cases operated on by Mr. Butcher. The limitation of our space prevents us from giving an analysis of the cases related; we therefore will merely commend the book to the favourable notice of all operating surgeons.

British Medical Journal.

SATURDAY, MAY 28th, 1859.

MEDICAL SOCIETIES AND OUR BRANCHES.

If the reader will only run his eye over the list of provincial Medical and Scientific Societies to be found in the *British Medical Directory*, he will become aware of the fact that there are a large number of small associations throughout the country, whose objects, to a certain extent, are identical with those of the British Medical Association. In nearly every county, besides the Branch of the Association, there is to be found either a local Medical Society, meeting at stated times for the reading of papers and the discussion of medico-chirurgical topics, or a Medico-Ethical Society, established for the purpose of maintaining professional honour among its members. Now, it does strike us, that there is much loss of power in this duplicate system, which is disadvantageous to the progress of medicine. Surely one large provincial Medical Society would be infinitely better than two or three small ones; and, as far as we can see, consolidation would lead to a considerable saving in working expenses.

Let us take the county of Yorkshire, for instance. In this district there are at least six medical societies; viz. the York Medical Society; the York Medico-Ethical Association; the Bradford Medical Society; the Bradford Medico-Ethical Society; the Huddersfield Medico-Ethical Society; and the Sheffield Medical Society. Yet all these scientific bodies, which must lose much of their power and utility by isolated existence, are within easy call of one of the largest Branches of this Association—the Yorkshire Branch; and what is more remarkable, in the majority of cases, very many of their members are also members of the larger association. It certainly does strike us that, with a little management, a concentration of all this dissociated power might be made, very advantageously for all parties. Why should not these various societies affiliate themselves to the Association as sub-branches of the Yorkshire Branch? By so doing, their power, both in a scientific and in a social point of view, would be greatly augmented. The Salopian Medico-Ethical Society has already given notice of its intention to join the Shropshire Branch of the Association; and we hope its example will be taken by the numerous other societies of a like nature throughout the country.

We require to localise, as far as possible, medical meetings; but to centralise and organise their power. Now, this can readily be accomplished by means of the machinery our Association already has in existence. Our Branches would easily accommodate all the working bees to be found among us. We are convinced that it only requires a little exertion on the part of individuals to amalgamate a large number of these outlying societies with the British Medical Association. Like separate globules of mercury, they would coalesce with the larger body on a very slight provocation. Why, for instance, should not the Brighton and Sussex Medico-Chirurgical Society form the nucleus of a sub-Branch of the South-Eastern Branch? The Chester Medical and Ethical Society, again, is too provokingly near the Lancashire and Cheshire Branch to hold itself aloof. The West Kent Medico-Chirurgical Society must find itself crossing the path of the Rochester and Gravesend District Meetings of the South-Eastern Branch, which have of late so increased its members. The East Sussex Medico-Chirurgical Society moves also in the orbit of the South-Eastern Branch, and might well resolve itself into the central system. The Leicester Medical Society, and the Nottingham Medico-Chirurgical Society, should each properly belong to our Midland Branch. The Manchester Medico-Ethical Association would act with far greater weight if it were a part of the Lancashire and Cheshire Branch. The Southampton Medical Society, again, would dovetail very well with the Reading Branch; and the Plymouth Medical Society with the South-Western Branch.

What we mean is, not that these local societies should absolutely have no action beyond that imparted by the general movements of the Branches into which they were incorporated; but that each should form, as it were, a division of a Branch, subject to the regulations and enjoying all the privileges of the larger body and of the Association; but having the power of meeting as often as convenient for the discussion of subjects connected with medicine. How this plan has worked for the good of the profession and of the Association, may be inferred from the success of the district meetings in West Kent, held in connection with the South-Eastern Branch.

We most certainly wish there was a greater spirit of the Propaganda among our associates; if so, we need only to point out the innumerable points afforded by the Association for friendly aggression upon neighbouring societies, to ensure a very large augmentation of our power. The Association has of late taken upon itself a fresh growth. We have been making new wood, if we may so speak, both in Scotland and Ireland; and the time is come, we think, for a vigorous attack upon our own provinces—these floating nebulæ should be attracted into the central sun of our Association. The order of the day among medical men is organisation and centralisation. Without this latter principle, we shall never become a powerful body in the state; and with it, we may do nearly what we like. The law and the church have from time immemorial acted upon this knowledge, and we see the consequences—the two Houses of Parliament permeated by their influence. If vigorously worked, we see in the future of this Association a much larger share of influence than it has yet enjoyed; but to bring this to bear, we must not neglect to strengthen our tent-poles and to lengthen our tent-cords. We have pointed out one way in which our associates can work towards this desirable end, and we trust that "annexation" will be a more familiar term among us than it has yet proved to be.

THE WEEK.

The examination of Thomas Smethurst, suspected of the murder of Isabella Bankes, was resumed yesterday (Friday) week, before the Richmond magistrates. Dr. A. S. Taylor deposed to the examination of certain bottles which he had received. One bottle contained about six drachms of chlorate of potash. Another contained a saline solution, which, on careful examination, was found to contain, in each ounce, one grain of arsenic and seven grains of chlorate of potash. On examining portions of the body, Dr. Taylor found antimony in one of the kidneys, in the small intestines, in some blood taken from the heart, and in some blood obtained from the jar in which the viscera were contained; but not in the stomach, large intestines, liver, or spleen. None of the viscera contained arsenic. He believed the cause of death to be the administration of arsenic and antimony in small doses at intervals; the arsenic being probably removed by the eliminative action of the chlorate of potash. The medical attendants on the deceased stated that they had never administered arsenic or antimony, nor chlorate of potash, in any form, to the deceased. The accused was committed for trial, on the charge of wilful murder.

The opulent and benevolent Parsee, Sir Jamsetjee Jejeebhoy, Bart., died at Bombay, on April 15th, at the age of nearly 76; and his remains were conveyed on the same day to the Tower of Silence. The *Bombay Gazette* states that the funeral procession was most numerously attended, and that during the day business was almost at a standstill in the town. The dockyard and factories were closed, as were also the schools and colleges; the Parsee clerks in the Government offices were allowed leave of absence; most of the Parsee shops and places of business were shut up; and in the afternoon the banks were closed. These honours were paid to the memory of the deceased, not on account of his wealth or his ability in business, but of his liberal spirit and willing hand. His benevolence was confined to no class or creed, but was exerted for the general benefit of the poor and the public of Bombay. Among the numerous acts of benevolence in which he has been engaged for upwards of a quarter of a century, and which render his name honourable, medicine will especially recognise the foundation and endowment of the hospital which bears his name.

Now that an impulse has been given, people are finding that public drinking fountains are really valuable and necessary institutions. Their erection is proceeding, principally at the expense of benevolent individuals, in several of our cities and towns: for instance, ten or a dozen of these fountains are to be opened in Manchester, by Mr. Robert Barnes; while one is also to be presented by Mr. Alderman Heywood. Our transatlantic brethren have heard of the movement, and are beginning to agitate for carrying it out in the States. The *New York Times* makes some excellent remarks, which will, we trust, lead either individual philanthropy, or the good sense and go-a-head spirit of the American people, to develope an institution which will do more good than all the Maine Laws in the universe. Our contemporary says:

"A society has recently been organised in London for the purpose of supplying that beer imbibing city with drinking fountains, that its thirsty inhabitants may be able to moisten their windpipes without being compelled to enter a gin shop, or purchase a pot of 'arf-an-arf.' London is but indifferently supplied with the aqueous element, and what they have is not of the purest quality; but it is placed within the reach of all the wayfarers of its interminable streets. In New York, which is the best watered city in the world, where the weather is generally dry, the heat often oppressive, and the dust always choking, there is not a public drinking fountain, supplied with a cup, where the stranger may clear his throat and slake his thirst. There are a few ornamental fountains, but they are carefully railed round so that they cannot be approached, and the jet throws up its sparkling columns of liquid brilliants in the centre of a stone basin, to which access is denied by the public authorities. There should be at least a thousand drinking fountains scattered over the city, supplied with cups, for the use of the wayfaring public; and these fountains, which should be mostly mural, and small, might be rendered, at a very trifling expense, highly ornamental, and in the highest degree beneficial. They would, it is true, be the ruin of hundreds of drinking saloons, where bad liquor is sold, and that may be one reason why the city has not been supplied with them. Paris is full of drinking fountains for the benefit of the people; but then Paris is under the rule of a despot who will see that the comfort of the people is secured; while New York, being governed by the people, is sadly neglected by its governors. The absence of public drinking fountains in our streets is as strange an anomaly as the lack of bathing places on the river fronts of the city. With the salt water flowing all around us, and fresh water running through all our streets, there is not a place where one of our dirty, thirsty, and wearied citizens can either bathe his person or quench his thirst, free of charge. As the hot weather will soon be upon us, and the dusty season has already arrived, it is about time that our city fathers took these things into serious consideration."

An act of justice—tardy, though not on that account the less acceptable both to the recipient and to the class to which he belongs—has just been paid in the promotion of Mr. Robert McCormick to the rank of Deputy-Inspector of Hospitals and Fleets. The claims of this meritorious officer of Her Majesty's Navy are founded principally on his eminent services in connexion with the scientific expeditions to the Polar regions. In 1827, he was appointed assistant-surgeon to the *Hecla*, under the command of Sir Edward Parry, and accompanied that vessel in the attempt to reach the North Pole. On his return, he was promoted to the rank of surgeon by His Royal Highness the Duke of Clarence, then Lord High Admiral. In the years 1839-43, he acted as chief medical officer and naturalist to the Antarctic expedition, in the voyage of the *Erebus* and *Terror;* in 1852, he commanded a boat-expedition up the Wellington Channel, in search of Sir John Franklin, in Her Majesty's boat *Forlorn Hope;* and in 1853 he volunteered to go up Smith's Sound, in command of the *Mary* yacht, to explore the Polar Ocean. In addition to these services in the frigid zones, extending altogether over a period of about seven years, Mr. McCormick has seen much service in tropical regions. His promotion, if his merits had been recognised in common with those of other officers, would have taken place long ago; and his recent advancement is an act which, like the honourable distinction bestowed some months ago on Dr. McWilliam, will be remembered to the credit of the present heads of the Admiralty.

Association Intelligence.

BRITISH MEDICAL ASSOCIATION: ANNUAL MEETING.

The Twenty-Seventh Annual Meeting of the British Medical Association will be holden in Liverpool, on Wednesday, Thursday, and Friday, the 27th, 28th and 29th days of July.

President—W. P. Alison, M.D., F.R.S.E., Edinburgh.
President-Elect—James R. W. Vose, M.D., Liverpool.

The Address in Medicine will be delivered by Edward Waters, M.D., Chester, President-elect of the Lancashire and Cheshire Branch.

The Address in Physiology will be delivered by A. T. H. Waters, Esq., Liverpool, Lecturer on Anatomy and Physiology in the Royal Infirmary School of Medicine.

Philip H. Williams, M.D., *General Secretary.*

Worcester, April 26th, 1859.

LANCASHIRE AND CHESHIRE BRANCH.

The Twenty-third Annual Meeting of this Branch will be held on Wednesday, June 8th, at the Town Hall, Chester, at Twelve o'clock at noon, under the presidency of E. Waters, M.D.

The members and their friends will dine together after the meeting, at the Albion Hotel.

Gentlemen who intend to bring forward cases or communications are requested to send notice to the Secretary as early as possible.

A. T. H. Waters,
Honorary Secretary.

Liverpool, May 11th, 1859.

BRANCH MEETINGS TO BE HELD.

NAME OF BRANCH.	PLACE OF MEETING.	DATE.
South Midland. [Annual Meeting.]	Infirmary, Northampton.	Monday, May 30th, 1 P.M.
Lancashire and Cheshire. [Annual Meeting.]	Town Hall, Chester.	Wednesday, June 8th, 12 noon.
Birmingham and Midland Counties. [Annual Meeting.]	Hen and Chickens Hotel, Birmingham.	Friday, June 10th, 3½ P.M.

[To prevent delay, Reports of Branch Meetings should be sent direct to the office, 37, Great Queen Street.]

ROCHESTER, MAIDSTONE, GRAVESEND, AND DARTFORD DISTRICT MEETINGS, IN CONNEXION WITH THE SOUTH-EASTERN BRANCH.

The last of the series of meetings for the present session was held at the Bull Inn, Dartford, on Friday, May 20th, at 3.30 P.M.; J. Cordy Burrows, Esq. (Brighton), President of the Branch, in the Chair. There were also present: John Armstrong, M.D. (Gravesend); F. J. Brown, M.D. (Chatham); J. E. Crook, M.D. (Northfleet); Daniel Culhane, Esq. (Dartford); James Dulvey, Esq. (Brompton, Chatham); Frederick Fry, Esq. (Maidstone); J. H. Gramshaw, Esq. (Gravesend); Adam Martin, M.D. (Rochester); C. J. Pinching, Esq. (Gravesend); Thomas Hextall Smith, Esq. (St. Mary Cray); Flaxman Spurrell, Esq. (Bexley Heath); and John W. Woodfall, M.D. (Maidstone); with the following gentlemen as visitors: Wm. Camps, M.D. (Park Street, Grosvenor Square); Joseph C. Martin, Esq. (Dartford); Ebenezer Moore, Esq. (Dartford); and John Grantham, Esq. (Crayford).

The minutes of the last meeting having been read and confirmed, the President delivered an appropriate address.

NEW MEMBERS.

The following gentlemen were then elected members of the Association and of the Branch, each having been duly proposed, seconded, and supported:—Ebenezer Moore, Esq. (Dartford); Joseph C. Martin, Esq. (Dartford); John Grantham, Esq. (Crayford); Jarman Patrick, Esq. (New Brompton).

PAPERS AND COMMUNICATIONS.

The following communications were then read:—

1. On the Nature and Treatment of Diphtheria. By T. Hextall Smith, Esq. (St. Mary Cray).
2. On a Case of Neuralgia. By A. Martin, M.D. (Rochester).
3. On Acute Hydrocephalus. By J. E. Crook, M.D. (Northfleet).
4. Mr. Spurrell, of Bexley Heath, exhibited several interesting preparations, with the aid of a good microscope. There was also a great variety of surgical apparatus on the side-tables.

The thanks of the meeting were unanimously and heartily voted to those gentlemen who had thus contributed so materially to the pleasure of those assembled; and Mr. Smith, Dr. Martin, and Dr. Crook, were requested to allow their communications to be published in the Journal of the Association.

Thanks were with equal unanimity and heartiness accorded to the President of the Branch, for his kindness in having come from so great a distance, and for his ability in the chair; after which, at 6 P.M., the members present adjourned to dinner. Soon after 9 P.M., the meeting broke up, having passed an evening of great enjoyment.

Reports of Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, May 10th, 1859.

F. C. Skey, Esq., F.R.S., President, in the Chair.

PRACTICAL DEDUCTIONS FROM AN EXPERIMENTAL INQUIRY INTO THE INFLUENCE OF FOOD. BY E. SMITH, M.D., LL.B., ETC.

The author, in some preliminary remarks, referred to the large amount of vital action which is necessary to maintain life, and mentioned the various circumstances which he had noted during the continuance of a prolonged fast. He stated that the practice of administering arrow-root, or other fashionable foods, consisting of starch, with water, under the impression that it was more nutritious and easier of assimilation than wheat-flour, was indefensible, since it did not sustain the vital action to a degree capable of maintaining life; and that Nature has not provided starch, as food, altogether apart from nitrogenous substances. He contrasted the action (or rather want of action) of starch with that of the cereals, and showed that the latter is nearly as great as that of any substances with which we are acquainted. He drew the distinction between an action which increases the existing amount of vital force, and that which only tends to prevent loss of vital power—two circumstances which, in practice, are commonly confounded; and showed that beef-tea, wines, and brandy, can act only in the latter mode, whilst the cereals act in the first named manner. Hence, in cases of prolonged exhaustion, where there has long been more waste than supply, the former is not sufficient, and it is essential that the cereals be added or substituted.

The action of milk is exceedingly analogous to that of the cereals, both in extent and duration; and the combination of the two appeared to be the most perfect kind of food. The casein is to the milk what gluten is to bread; and the oil in milk is associated with substances (respiratory excitants) which call it into action in a manner quite analogous to the common combination of bread and butter, or of a mixture of fat and lean flesh. He showed that milk and flesh are the best and most natural modes of exhibiting fat, and altogether preferable to the administration of separated oils. He referred to the frequent use of skimmed milk in Germany as a medicinal agent, and of sour milk in Greece and America as a part of food; and explained the action of the former by its casein and sugar as respiratory excitants, and that of the latter by the advantage of administering lactic and other acids in that combination in the summer season, and at other times when the blood, by tending to undue alkalinity, is less capable of carrying on the oxygenating process. He showed that, in fevers, skimmed milk is preferable to new milk.

As fats lessen the respiratory changes, they ought to be, and are, combined with other articles of food which increase them. He referred to the importance of determining the reasons for the administration of both fat and starch, and showed that there is less difference in the relative amount of these two substances used in different climates, than has been commonly be-

lieved. He attached importance to the physical properties of fat, and explained the beneficial action of that substance when applied to the skin by its power to retard the conversion of the fluid perspiration into vapour, and thereby to lessen the waste of heat by the skin. He thought this latter mode of employment of fat to be especially fitted for cases of debility with lessened appetite and perspiring soft skin, in whom the waste is always greater than the supply.

The beneficial action of sugar was insisted upon; and the love of the French for sugar and water was explained by the refreshing coolness, the innocuousness and the agreeable flavour of the fresh made beverage, and the great freedom and lightness of respiration which attends its action. He thought the ill effects of sugar in the healthy system had been exaggerated.

The action of animal substances in increasing the respiratory process, in addition to the supply of plastic materials, was dwelt upon, and shown to be of great value to the system. These are allied to gluten, and some of them probably act as ferments; and, in illustration, he especially cited cheese, which promotes digestion if taken in small quantity, but is apt to disturb it if much is eaten.

Tea was shown to cause increased waste, and to excite every function of the body; and hence was well fitted to cases where there was a superfluity of material in the system, or where we otherwise desire to induce a temporary increase in the vital action; but is injurious in those who are under-fed, or in any case where there is greater waste than supply: and, in illustration, cited the increase in the loss of weight of the prisoners at Wakefield when tea was added to their food. The action of tea had been hitherto misunderstood; but the sagacious observation of Liebig, as to its analogy with the active principle of the bile, was much commended. He recommended its use, instead of spirituous liquors, by soldiers on march, or otherwise exposed for a lengthened period to great heat; since, by its powerful influence in increasing respiration and the action of the skin, without increasing pulsation, it was particularly fitted to counteract the influence of heat in its tendency to induce "heat-apoplexy", or, as more suitably termed by Mr. Longmore, "heat-asphyxia". Twenty-five grains of tea, in a concentrated cold infusion, taken every hour or half-hour, during exposure, would suffice. For similar reasons, he urgently recommended it as an adjunct in the treatment of suspended animation, as from immersion. It has a rapid and accumulative action, so that small and repeated doses have much greater effect than large and isolated ones. It differs from coffee chiefly by increasing the action of the skin, and thereby tending to cool the body; and therefore the two substances are applicable to different conditions of the system. He thought that both, and particularly tea, ought to be more commonly used as medicinal agents. Coffee-leaves he believed to be a valuable febrifuge medicine, and one particularly fitted for cases of nervous excitability.

The author then contrasted the effects of brandy and gin with tea, and showed that in all respects they were directly opposed; but coffee so far resembled them in action, that it lessened the action of the skin, and thereby lessened refrigeration. Rum and beer he regarded as restoratives, and the combination of rum and milk as the best restorative employed as food; whilst brandy and gin simply lessened waste. He regarded all alcohols as having their chief influence in sustaining the action of the heart; and recommended that they should be given in small quantities, and repeated every quarter or half hour in urgent cases, so as to accumulate their action, rather than allow reaction to follow each dose by permitting a long interval between the doses. He mentioned a case in which he gave six bottles of port wine in forty-eight hours, with the effect of saving the patient's life, and reducing the pulse from 150 to 90 per minute. He believed that alcohol increased the respiratory action indirectly through the nervous system; and that, in fine old wines and spirits, the action is lessened by the volatile elements, which have a conservative tendency. He particularly cited the conservative influence of fine old port wine, and the disturbing influence of new and inferior spirits. The primary and secondary action of all alcohols, when taken in an amount to affect the sensorium, was always felt; and the author described the attendant circumstances.

In conclusion, the author stated that dislikes for food are indicative of lessened action, and that other foods of analogous properties should be provided in such cases; and also that it was probable that at least some kinds of azotised substances are more fitted for the hot season, when the chemical changes are greatly reduced, than has been heretofore believed.

Dr. Stallard said, however valuable the facts stated by the author, they should, nevertheless, be received with a certain amount of caution, and that a wider view of the case should be taken than that presented in the paper. The recommendation of bread, in preference to beef-tea, seemed so opposed to the general experience of the profession, that it ought not to be received without further confirmation. Dr. Smith's experiments, however, were upon a very healthy person, and this possibly might make all the difference. Beef-tea might be absorbed by the simple law of the percolation of fluids through membranes; but bread had to undergo a distinctly assimilative process, which in a weak patient might not be easily carried on. The author scarcely took into consideration the influence exerted by fat in the assimilation of non-nitrogenous as well as nitrogenous foods. It was possible that fat, instead of being assimilated, might pass out in the fæces. With regard to tea, it no doubt produced a greatly increased respiratory action; but the question was whether the increase was temporary, or whether it had a permanent specific effect, due to the composition of the tea itself. It might possibly have an ultimate depressing effect. He inquired whether the author's experiments showed any increase of the vapour expired after the use of alcohol?

Dr. J. A. Wilson said that the paper was of such an unreasonable length, that it precluded anything like an adequate discussion of its statements—an evil which, he said, was unfortunately growing upon the Society. He agreed with the author's remarks as to the importance of fat in supplying loss by perspiration. Liebig's statements had led to the inference that fat was not used in warm countries; but in the course of Captain Sturt's journeys in the interior of Australia, where the heat in the deserts was most intense, he and his followers ate fat with the greatest avidity, their desire for it departing only when the heat subsided. Other instances of a similar kind had been recorded. The utility of casein to aid digestion had been long known, since Shakespeare made *Ajax* address *Thersites*, "Come my cheese, my digestion". [*A laugh.*]

Dr. Smith, in reply, stated that when he recommended the use of starchy food and milk, instead of or in addition to beef-tea and brandy in cases of exhaustion, he was desirous to urge the distinction between food which can alone supply material to meet waste and that which simply tends to lessen the rate of the wasting process. Fat when taken alone lessens the evolution of carbonic acid, and when taken with the cereals it also somewhat lessens (instead of increasing) their action on the same function. The action of tea is temporary; but if food is duly supplied to meet the increased waste, tea does not cause a subsequent decline of action. Inhalation of alcohol increases the amount of vapour exhaled by the lungs, probably from some local action; but when it is taken into the stomach, the doses taken by the author did not produce a very decided effect; but this subject was only incidentally examined in the present series of experiments. Casein, known as a digester, was proved to act in common with other nitrogenous substances to promote the transformation of starch and fat, or at least the evolution of carbonic acid from whatever source.

CASE OF CONTRACTION OF THE HEEL (TALIPES EQUINUS) FROM EXCESS OF ACTION OF THE MUSCLES OF THE CALF.

BY HOLMES COOTE, ESQ.

Mr. Coote communicated the particulars of a case to illustrate a form of talipes equinus not commonly recognised. There was no paralysis of any set of muscles; the flexors and extensors of the leg being firm and well nourished. But there existed a loss of balance of power between the two; and the flexor muscles gradually drew up the heel so as to keep the toes permanently pointed downwards. The first indication of this morbid state was often overlooked by the surgeon. The foot was contracted and held fast when raised to a right angle with the leg; and patients tripped and stumbled in walking from the toes catching in any object on the floor. The disease had often been mistaken for incipient disease of the hip, in consequence of the irregularity in the patient's gait. The remedy consisted in the division of the tendo Achillis, and in the very gradual extension of the twisting medium. The muscles of the calf were very often much more highly developed than usual: this hypertrophied state commonly subsided after treatment. A boot and iron were frequently needed during convalescence.

Mr. Solly said that the statement of the author, that the cases referred to were very little known, was incorrect, as hospital surgeons were familiar with them.

OBSTETRICAL SOCIETY OF LONDON.

WEDNESDAY, MAY 4TH, 1859.

EDWARD RIGBY, M.D., President, in the Chair.

THIRTY-ONE candidates were proposed for the fellowship. These gentlemen will be balloted for at the next meeting, on June 1st.

CASES OF EXTRAUTERINE FŒTATION.

Dr. HARLEY exhibited a specimen of Fallopian tube pregnancy, complicated with fibrous tumours of the uterus. The preparation was taken from the body of a negress, aged 22, who died from rupture of the tube at about the fifth month of gestation. The patient was under the care of Dr. Magrath, of Jamaica.

Dr. WALLER also showed a considerable number of perfectly formed fœtal bones, which had passed from the rectum of a female, aged 47. The history was to this effect:—Ten years before the bones were passed, this woman fell in the family-way. At the end of nine months, labour pains set in, a sanguineous discharge followed, and then all symptoms of labour passed away. A month afterwards, menstruation was established, and continued regular for ten years. The catamenia then became irregular, her health failed, and she had difficulty in the passage of the motions. Fœtal bones were then found to come away with the latter; and when all seemed to have been passed, the general health was restored.

A discussion followed, in which Dr. Tyler Smith, Dr. Granville, Dr. Rigby, Dr. Gibb, Dr. Harley, and Dr. Routh, took part.

DESCRIPTION OF AN ANENCEPHALIAN MONSTER.

BY R. U. WEST, M.D.

The woman who gave birth to this monster (which was exhibited to the Fellows), had previously had a large family of healthy well developed children. On the present occasion, there was a very large quantity of liquor amnii, after the discharge of which, what was thought to be the head of the fœtus was felt low down in the vagina. A hand and arm also kept coming down, though they were pushed back again and again. Feeling convinced that the infant was dead, Dr. WEST bored a hole in the presenting part, introduced his forefinger into the opening thus made, and pulled the fœtus away. There was an enormous placenta. The monster proved to be a perfect specimen of Geoffroy St. Hilaire's rare genus "Dérencéphale".

ABORTION, WITH ALBUMINURIA AND CONVULSIONS, IN SIX SUCCESSIVE PREGNANCIES. UNDER THE CARE OF TYLER SMITH, M.D.

[*Reported by* W. H. BROADBENT, M.B.]

This case furnished a remarkable instance of the relation of puerperal convulsions with albuminuria in successive pregnancies. The cause of the convulsions was evidently the same in all the pregnancies. It also seemed that it was not organic renal disease which stood in the relation of cause to the convulsions and abortions; since, while she was under observation, albumen only appeared in the urine when pregnancy had reached a certain stage, and disappeared within a fortnight of the expulsion of the ovum. From this case, and from others, Dr. TYLER SMITH concluded that the albuminuria was not to be accounted for by any mechanical interference with the renal circulation by the gravid uterus. Albumen appeared in the urine at a period of gestation, when the uterus was too small to exert pressure on the kidneys. The renal congestion, which no doubt was the proximate cause of the albuminuria, depended, in the opinion of Dr. Tyler Smith, on reflex irritation of the kidneys by the gravid uterus, and resembled the congestion of the mammæ, salivary glands, and other organs in reflex sympathy with this organ.

CASES OF POLYPUS OF THE UTERUS: WITH CLINICAL OBSERVATIONS. BY FRANCIS ELKINGTON, M.D.

Dr. ELKINGTON recorded the full histories of six cases of large uterine polypi, chiefly remarkable for the size of the tumours, and the difficulties which were generally experienced in effecting their removal.

CASE I occurred in April 1849. A ligature was applied by means of Gooch's cannula, and at the end of five days the neck of the polypus was cut through. The lady afterwards became pregnant, and did well.

CASE II. This example was under treatment at the same time. On making a vaginal examination, a large fleshy tumour was found completely filling the vagina, the os uteri being situated high up, and tightly embracing the mass. An obstetric physician of some repute had diagnosed inversion of the uterus, and recommended that an attempt should be made at reduction. Dr. Elkington, finding the uterus in its normal position by means of the uterine sound, detected the true character of the disease, and in consequence applied a ligature, which cut through the tumour at the end of fourteen days. The patient gradually regained her health, and afterwards became pregnant.

CASE III was that of a woman suffering from chronic inversion of the uterus, which had been mistaken for polypus. She was pale and anæmic, aged 47, and her only labour had occurred twenty-six years previously, and had been severe, with adherent placenta. At various times she had been much weakened by severe attacks of flooding, which at first recurred about every fortnight, but subsequently once a month. She also experienced at times much pain in the abdomen, accompanied with nausea and vomiting, so that she had never known good health since her confinement. On examination, a pear-shaped tumour was found protruding from the os uteri, and occupying the upper part of the vagina; it was tender to the touch, had the appearance of the inner surface of the uterus, and the sound could not be passed between the tumour and the cervix. It seemed evident that the case was one of chronic inversion of the uterus; but as this condition had existed so many years, it was deemed unadvisable to make any attempts at reduction, and consequently only palliative treatment was adopted. By the latter, the general health was improved, the discharges lessened, and the suffering much diminished.

CASE IV. This patient was under the author's care in January 1846. She was the mother of twelve children, and she aborted in 1844, when in her forty-ninth year. She had never been well since, and had been weakened by several attacks of flooding. On examination, the uterus was found enlarged and tender, with the os uteri small. Leeches were applied, which relieved the tenderness, but the discharge, sometimes mucopurulent, sometimes sanguineous, continued. She remained very ill and feeble for many months, but no part of the tumour passed through the os uteri until March 11th, 1847. On the following morning, a ligature was applied round the base of the tumour, a large part of the latter coming away in seven days, and in eight days more the ligature, with another portion of the growth. Health and strength were slowly regained; but in July, the patient was well, and was seen in good health two years afterwards.

CASE V. This patient consulted Dr. Elkington in September 1839, at which time she was out of health, and was "unwell" too often. No enlargement of the uterus could then be detected; nor was any discovered until Christmas of the same year, when it was thought that a fibrous tumour or polypus existed in the uterine cavity. There was little change for some months, except that the uterus gradually increased in size; but about April 1840, the os opened, and allowed the tumour to pass into the vagina. In July, a ligature was passed around the upper portion of the polypus, which came away on the 11th, with a portion of the growth weighing sixteen ounces. It was clear, however, that a large part of the tumour still remained *in utero*, which in time descended into the vagina, so that a second ligature was used in September 1840. By this means, twenty ounces of the mass were got away, but the removal was followed by very severe phlebitis. Ultimately, she got much better, and continued well for twelve months, at the end of which time the floodings began to return, and in two years she was as large as a woman at the seventh or eighth month of pregnancy. In December 1842, there was some decomposition of the tumour, the discharge from which was most offensive. The mass gradually descended into the vagina, and on February 6th, 1843, a ligature was applied for the third time. Pieces of the decomposed tumour came away with the whipcord on February 19th, but the uterus still continued much enlarged. In December 1843, her health began to break down, but she partially improved, and in February 1844, was stronger, though the uterus was very much enlarged. At various subsequent periods, parts of the mass sloughed, and were expelled; until, in March 1846, another ligature was applied, which in a few days brought away one pound and a quarter of the growth. From this date, she again improved, but remained very large, until May 1847, when another portion was taken away by ligature. In the early part of 1849, she got permanently worse; and in May she died. Unfortunately, no *post mortem* examination could be obtained.

CASE VI was seen in April 1856. In this instance, there was a large polypoid growth, which was removed by ligature, but

it grew again; so that in March 1858, a second ligature was required. The lady, however, died from exhaustion before the tumour came away.

Dr. RIGBY said that the cases detailed were such as gave rise to great anxiety in their treatment. He had had a patient under his care whose history partly resembled Dr. Elkington's fifth case, and from whom he had removed upwards of forty pounds weight of tissue, at different operations with the ligature.

Dr. WALLER had had a similar case under his care at St. Thomas's Hospital. He showed the instrument which he generally used for applying the ligature, and which consisted of Gooch's cannula, slightly modified.

Dr. ROUTH feared that he might be deemed guilty of some presumption in criticising Dr. Elkington's paper; but still he felt it right to state that, in his opinion, the plan of treatment adopted had not been so good as he had frequently seen practised by continental surgeons. He thought that in most instances of polypus uteri the tumour might be cut off without any fear of hæmorrhage; a proceeding which was far preferable to the ligature, since by it all risk of purulent absorption was avoided. Supposing, however, that the practitioner was in dread of much bleeding, he might safely employ the écraseur; the wire or chain of which could even be passed round the tumour while it was still in the uterus.

Dr. TYLER SMITH did not consider that any blame attached to Dr. Elkington for the course he had pursued, especially as the cases had occurred before the écraseur was resorted to as much as it is now. Moreover, he had found it difficult to apply this instrument, except when the polypus was small. He was in the habit, however, of passing a wire round the tumour by means of Gooch's cannula; and then, by tightening the wire at once with the aid of a small winch, he could cut off and remove the polypus in a few minutes. Dr. Smith stated also that he had lately seen a patient, with Sir Charles Locock, in whom the tumour was so large that only half of it could be removed at the first operation; and there was still a large mass to get away.

Dr. MURPHY had received a great deal of instruction from the paper, though he rather regarded the treatment adopted as belonging to a past age. He thought that most if not all polypi might be drawn down and cut off at once, without any injurious loss of blood. He was generally in the habit of applying a ligature, which was allowed to remain on for twenty-four hours. By the aid of this the tumour was then drawn down to the orifice of the vulva, and the pedicle snipped through with a pair of scissors. By this plan there was not the slightest risk of hæmorrhage; and as there was no offensive discharges, there could be no fear of purulent infection. At the same time, he was well aware that many difficult cases were met with, in practice, where resort could not be had to this measure; in many of which he would recommend dilatation of the os uteri, and then the drawing down of the tumour by means of forceps.

Dr. ELKINGTON having replied, the Society adjourned.

Editor's Letter Box.

POTASSA FUSA TO THE URETHRA.

SIR,—I read with interest the "New Mode of Relieving Retention of Urine", by Mr. Langston Parker, in your last number.

Though I have never used potassa fusa for the purpose of relieving retention, I can bear testimony to its power of overcoming urethral obstruction; but it is possible to produce an almost alarming amount of hæmorrhage with potassa fusa, even when cautiously applied. I had been treating an obstinate stricture for some time, without making any satisfactory progress, when I determined to apply the caustic potass. A small piece was inserted into the end of a wax bougie, which was well oiled and passed down to the stricture, against which it was held for two or three seconds. On withdrawing the instrument, some blood escaped: the bleeding continued, gradually increasing in quantity, for three or four hours. While waiting in a chemist's shop for some gallic acid which I had prescribed, my patient was advised to apply to another surgeon, who, ignorant of what had been done, immediately proved its efficacy by passing a good sized catheter with the utmost ease. I am, etc., F.R.C.S.

Brighton, May 23rd, 1859.

POST MORTEM EXAMINATIONS.

LETTER FROM WILLIAM SANKEY, ESQ., F.R.C.S.

SIR,—I observe with regret, in the returns of cases of diphtheria, that, in the majority of fatal cases, no *post mortem* examination has taken place. Every medical man has now an opportunity of obtaining, if not enforcing, the same, by refusing to give a certificate of the cause of death, which, strictly speaking, he can never give, or at least in very few cases, without such evidence.

I fear the fault does not rest so much with the friends or relatives of the patient, as with the medical man himself. I have now been nearly fifty years engaged in the duties of a general practitioner in the country, and can conscientiously aver that I have never neglected an opportunity of making a *post mortem* examination in cases where the same could elucidate an obscure case, or confirm or refute the previous opinions of the cause of death. The present rising generation are, I am sorry to say, more zealous in filling their coffers than in adding to their own and the public knowledge, and avoid, instead of seeking, *post mortem* examinations, unless remunerated for the same. I am, etc.,

WILLIAM SANKEY.

Dover, May 18th, 1859.

LARA AND WALTERS *v.* WARD.

LETTER FROM MESSRS. LARA AND WALTERS.

SIR,—As you have permitted Dr. Ward, to our possible detriment, to give in your columns his own version of the above trial, in opposition to the published report, will you allow us to state,

That our case did not break down, but that judgment was given against us solely on the novel ground that we had rescinded our whole contract with the defendant by permitting him to withdraw his practice from our books, which he did, stating that he was resolved to remain in Kensington, two or three days only before he sold it to Dr. Williams.

That, having furnished full particulars of the practice to Dr. Williams, our "extraordinary demand", £25:5:6, would otherwise most certainly have been awarded us by the judge, in accordance with our express and unequivocal terms, to which the defendant had agreed.

That, though this is immaterial, Dr. Williams did not give us the slightest intimation of having previously heard of the matter.

That the report which appeared in your paper, and comprised these facts, was not a mere statement of counsel, but contained Mr. Lara's sworn testimony; and that if, from want of memory, Dr. Williams had contradicted this, it could have been confirmed in every particular, from the latter's own lips, by a gentleman with whom we were personally acquainted, but perfectly well known both to him and to Dr. Ward.

We are, etc., LARA AND WALTERS.

Temple, May 21st, 1859.

Medical News.

BIRTHS, MARRIAGES, DEATHS, AND APPOINTMENTS.

** In these lists, an asterisk is prefixed to the names of Members of the Association.*

BIRTHS.

GARDINER. On May 20th, at Bristol, the wife of George Gardiner, Esq., Surgeon, of a daughter.

JEAFFRESON. On May 20th, at Finsbury Square, the wife of Henry Jeaffreson, M.D., of a daughter.

JENNER. On May 24th, at 8, Harley Street, Cavendish Square, the wife of William Jenner, M.D., of a daughter.

MARTYN. On May 17th, at Bristol, the wife of *Samuel Martyn, M.D., of a daughter.

MONRO. On May 20th, at Churton House, Belgrave Road, the wife of James Monro, M.D., Surgeon-Major Coldstream Guards, of a son.

MURRAY. On May 21st, at 17, Green Street, Grosvenor Square, the wife of *Gustavus C. P. Murray, Esq., Surgeon, of a son.

STEVENS. On May 23rd, at Hoddesdon, Herts, the wife of Robert Ingram Stevens, Esq., Surgeon, of a daughter.

MARRIAGES.

Crosby—Ryan. Crosby, Thomas B., Esq., Surgeon, of 23, Finsbury Place, to Annie, only child of Joseph Ryan, Esq., of Gordon Place, Tavistock Square, at St. Pancras Church, on May 24th.

Easton—Marshall. Easton, Thomas Ogilvy, Esq., youngest son of the late John Easton, M.D., of Cowrance Hill, Dumfriesshire, to Elizabeth Agnes, eldest daughter of the late Rev. James Marshall, of Clifton, on May 19th.

Inman—Mackay. Inman, Robert Matthews, Esq., Surgeon, to Rose Munro, widow of the late Robert Mackay, Esq., of Williamstown, Australia, at Cyderhall, Sutherlandshire, on May 3rd.

Peren—Sylvester. Peren, Robert B., Esq., solicitor, of South Petherton, Somerset, to Mary, only daughter of Thomas Sylvester, Esq., Surgeon, of Highbridge, Somerset, at Burnham, on May 13th.

Peters—Stilwell. Peters, Joseph, Esq., of Wouldham Hall, Rochester, to Jane Catherine, eldest daughter of George Stilwell, Esq., Surgeon, of Epsom, at St. James's, Paddington, on May 21st.

Shuttleworth—Kean. Shuttleworth, Charles, Esq., Lieutenant 14th Royal Highlanders, to Caroline Janette Sybella, second daughter of the late Archibald Kean, M.D., Civil Surgeon of Moorshedabad, at Berhampore, Lower Bengal, on March 29th.

Somerville—Ward. *Somerville, Charles, M.D., of Bloxwich, to Jane, youngest daughter of the late John Ward, Esq., of Stafford, at Lichfield, on May 17th.

Trotter—Elliot. Trotter, James, Esq., Surgeon of the Durham Artillery Militia, to Mary, youngest daughter of the late John Elliot, Esq., banker, Carlisle, at Staindrop, Durham, on May 21st.

DEATHS.

Baird, John, M.D., at 45, Southampton Row, Russell Square, on May 18th.

Bellingham, Francis James, Esq., Surgeon, of Bourne, Lincolnshire, at Torquay, aged 41, on May 19th.

*Black, James, M.D., Surgeon to the West Norfolk and Lynn Hospital, at King's Lynn, suddenly, aged 31, on May 21st.

Hardey. On May 20th, at 2, Earl Street, Blackfriars, Sarah, wife of Key Hardey, Esq., Surgeon.

Howlett, Henry, Esq., Surgeon, late of Cambridge Terrace, Hyde Park, at Castlemaine, Australia, on March 1st.

Knapp. On April 12th, at Farnham, Mary Olive, wife of James M. Knapp, Esq., Surgeon Bombay Medical Service.

Litchfield. On April 12th, at Dholia, Khandeish, India, after a short illness, from an accident while on field-service, Lieutenant Robert Litchfield, 30th Regiment Bombay Native Infantry, sixth son of Thomas Litchfield, Esq., Surgeon, Twickenham, aged 28.

Mackintosh, John, M.D., late Royal Artillery, near Dundee, on May 14th.

Menzies, Robert, Esq., Surgeon, at 86, Upper Stamford Street, aged 64, on May 17th.

Robertson, Archibald, Esq., Surgeon Royal Navy, at Twickenham, aged 74, on May 20th.

Sillery, Robert, M.D., of Dover, late Surgeon Royal Army, and for many years Senior Physician to the Military Lunatic Asylum, in London, on May 20th.

Thompson. On May 22nd, at 42, Sussex Gardens, Hyde Park, Helena Augusta, youngest daughter of Charles T. Thompson, M.D., aged 3 years and 4 months.

APPOINTMENTS.

Turner, G. B., M.D., elected Assistant-Surgeon to the East Sussex, Hastings, and St. Leonard's Infirmary, in the room of the late Walter Duke, Esq.

PASS LISTS.

Royal College of Physicians. At the Comitia Majora, held on Friday, May 13th, 1859,

Waller, Augustus Volney, M.D., Birmingham, was admitted a Licentiate of the College, under the new bye-laws.

Also, at the Comitia, on May 23rd,

Sutton, John Maule, M.D., Tenby, Pembrokeshire, was admitted a Licentiate under the same bye-laws.

Royal College of Surgeons. Members admitted at the meeting of the Court of Examiners, on Friday, May 13th, 1859:—

Alcock, Daniel Robert, Eccles Street, Dublin
Barr, Joseph Henry, Stockport
Bowstead, Rowland Mounsey, Caistor, Lincolnshire
Fernie, Henry Mortlock, Yelden, Bedfordshire
Gooding, John Callender, Barbadoes
Hewlett, Richard Whitfield, Harrow
Jay, Frederick Fitzherbert, Acle, Norfolk
Lloyd, Francis, Bedford Row
Mitchinson, Charles Calthrop, Boston, Lincolnshire
Parker, Albany John Etherington, Usk, Monmouthshire
Skardon, Thomas Gray, Dadbrook Maker, Devon
Spencer, Charles, Bury, Lancashire
Spouncer, Frederick Charles, Gainsborough
Stafford, Patrick Walter, Dublin
Tuck, Buckmaster Joseph, Blackheath
Watkin, John, Aberystwyth

Monday, May 16th:—

Armstrong, John Christopher, Gravesend
Ash, William, Lansdown Villas, Chelsea
Brend, William, Bideford, Devon
Bride, John, Liverpool
Brunton, Linton Bennett, Waterloo Place, Limehouse
Cullen, Peter, Calcutta
Emanuel, Leonard, St. John's Wood Place
Hall, Robert Arnold, Grantham, Lincolnshire
Hawkins, Thomas Henry, Reading, Berkshire
Hocken, Thomas Morland, Dublin
Hutchinson, Francis Blake, Bridge Street, Blackfriars
Illingworth, John Alfred, Newport, Monmouthshire
Jameson, George William, Caistor, Lincolnshire
Mackenzie, Walter Fawkes, Wigan, Lancashire
McMorris, Robert James, Tyrone, Ireland
Ormerod, William George, Bristol
Reid, John, Calcutta
Stedman, James Henry, Norwich
Thomas, John Lloyd, Pwllheli, Caernarvonshire
Trevor, James Ebenezer, Plymouth
Turton, Frederic, Wolverhampton
Utterson, Edward Vernon, Winchester
Watson, John, Newcastle-on-Tyne
White, Francis Thomas, Rawreth, Essex
Whitgrave, Vincent, Walsall, Staffordshire
Wickham, William, Tetbury, Gloucestershire

University of St. Andrew's. The following gentlemen, having previously obtained the degree of Doctor of Medicine, have been placed on the list of Honours.

First Class.

(The names are arranged in order of merit.)

Hewitt, Frederick Hughes, Guy's Hospital
Drysdale, Charles R., University College

Second Class.

Bancroft, Joseph, Manchester Medical School

Apothecaries' Hall. Members admitted on Thursday, May 19th, 1859:—

Hutcheson, Robert William, Bahamas
Plowman, Thomas, North Curry, Somersetshire
Taylor, William, Cardiff, Glamorganshire
Thomas, John Lloyd, Pwllheli, Carnarvonshire

HEALTH OF LONDON:—WEEK ENDING MAY 21st, 1859.

[*From the Registrar-General's Report.*]

The total deaths registered in London, which were 1207 in the last week of April, have constantly decreased in the three weeks of the current month, and in the week that ended last Saturday, they were 1057. In the ten years 1849-58, the average number of deaths in the weeks corresponding with last week was 1041; but as the deaths returned for last week occurred in a population which has increased, they should be compared with the average raised in proportion to that increase; namely, with 1145. The comparison shows that the deaths that occurred last week were less by 88 than the number that would have occurred if a mortality equal to the average rate for the third week of May had prevailed.

The births of last week exceeded the deaths of the same period by 612.

The present returns, in connexion with those of previous

weeks, show the deaths from small-pox in several sub-districts, and a certain though not strong or uniform tendency of this disease to increase. Last week, it was fatal in 23 cases: 19 of which occurred to children under ten years of age; 9 occurred to infants less than a year old. Four children died from it in the sub-district of Bethnal Green; and the Registrar of St. Mary, Newington, who returns two cases, states that it is very prevalent in his sub-district. The deaths from scarlatina, which were 57, 55, and 47, respectively in three previous weeks, declined last week to 39, of which six occurred in Lambeth, and three in Plumstead. Besides the 39 cases of scarlatina, there were 16 of diphtheria, which has not declined concurrently with the former disease. The deaths from diphtheria occurred as follows:—one in Ladbroke Villas, Kensington; one at 8, Thayer Street, Marylebone; one in Upper Avenue Road, Hampstead; one at 34, London Street, Pancras; one at 9, Cambridge Row, Camden Town; one at 10, Anderson's Road, Homerton; one at 42, King Street (St. Anne, Soho); one at 30, Ann's Place, Hackney Road; two in one family at 35, Coventry Street, Bethnal Green; one at 8, Worship Square, Shoreditch; one at 1, Martha Street, Haggerstone East; one at 18, Price's Street, St. Saviour; one at 67, Nelson Square; one at 36, Felix Street, Lambeth; and one at 13, Vauxhall Place. There were eight deaths in the week from erysipelas, three of which occurred to infants. Three children and two adults died from syphilis. Two persons died of ischuria. Of 47 violent deaths, 39 were by accident or negligence, four by murder (three of these infanticide), and four by suicide. A widow died on the 19th inst., at 15, Wellington Street, Shoreditch, at the age, as stated, of 100 years.

Last week the births of 859 boys and 810 girls, in all 1,669 children, were registered in London. In the ten corresponding weeks of the years 1849-58, the average number was 1,574.

At the Royal Observatory, Greenwich, the mean height of the barometer in the week was 29·668 in. The barometer fell from 29·92 in. on Sunday to 29·55 in. on Thursday, those points being the highest and lowest in the week. The mean temperature of the week was 52·6°, which is 0·4° below the average of the same week in 43 years (as determined by Mr. Glaisher). The thermometer in the shade attained its lowest point, 39·7°, on Sunday, and its highest, 67·9°, on Thursday. The range of the week was therefore 28·2°; the mean daily range was 13·9°. On Sunday the range was 24·3°; on Tuesday it was only 4°. The difference between the mean dew-point temperature and air temperature was 4·4°. The mean degree of humidity of the air was 88; on Wednesday, the humidity was 99, approaching complete saturation. The mean temperature of the water of the Thames was 55·9°. The wind blew invariably from the north-east, which has also been the prevailing direction since the beginning of the month. Rain fell to the amount of 1·60 in., the proportion of which that fell on Friday was 0·77 in. There was a thunder-storm on the evening of Thursday.

ASPHYXIA. An extraordinary case of asphyxia occurred a few days ago in the Rue de Tracy, when a young man suddenly rushed into a chemist's shop, with evident signs of intense agony, uttering inarticulate sounds and convulsively putting his hand to his throat. He tore off his cravat, and taking a small pair of embroidery scissors from his pocket, thrust them several times into the region of the windpipe. All this took place very rapidly, so that there was hardly time to bring the sufferer to a chair, when he sank into it, and it was found that life had fled. It has since been ascertained that deceased was a sailor, and had suffered, at Marseilles, from an attack of *angina membranacea*, which had rendered the dangerous operation of tracheotomy inevitable. His life had been saved by the aid of a silver tube put into the wound; but some time afterwards a physician whom he consulted advised him to remove it, as his recovery seemed to admit of no doubt. This advice was, however, premature, and the unfortunate young man was suffocated, as above described, by the closing of the wound; the cuts he had inflicted upon himself in his agony, with a view to reopen the windpipe, being pronounced utterly insufficient to cause death.

LUNACY IN WORKHOUSES. A blue book of eighty pages contains a supplement to the twelfth report of the Commission of Lunacy to the Lord Chancellor. It refers to the condition, character, and treatment of lunatics in Workhouses. The large increase of lunatics in workhouses is noticed, in the first instance, as a phenomenon requiring explanation; the number having risen from 6,800 to 7,666 between January 1857, and July 1858. The cases met with are those of persons suffering from chronic dementia, melancholia, and epilepsy; they comprise many who are idiotic or imbecile, and include none who are able to take care of their own interests or welfare, or to conduct themselves discreetly if left to themselves. The system of treatment in workhouses is so reprehensible as to surpass belief. The rules in force to check disorderly conduct in common paupers, are, most improperly, extended to the insane, who are, in effect, prisoners for life, incapable of asserting their rights, yet amenable to as much punishment as if they were quite sane. Of the metropolitan workhouses, the majority are of great size, old, badly constructed, and situate in the midst of dense populations; the same statement applies to the houses in large provincial towns. The deficiency of means of accommodation and exercise for lunatics is a source of infinite evil. The commissioners opine that the best mode of providing for the insane poor, who cannot be received into the present asylums, would be the erection of inexpensive buildings, adapted for the residence of idiotic, chronic, and harmless patients, in direct connection with, or at a convenient distance from, the existing institutions. These auxiliary asylums would be intermediate between union workhouses and the principal curative asylums. It is also suggested that the visiting justices of asylums have full power to visit workhouses, to order the removal of insane inmates therefrom to asylums at their discretion, and to order the removal into the asylum of pauper patients boarded with strangers. Various other suggestions are urged upon the attention of the Lord Chancellor to obviate the evils complained of.

THE MIDDLESEX HOSPITAL. The Governors of this Hospital have purchased an adjoining house, partly for the purpose of enlarging the out-patient department, but principally to obtain accommodation for the residence of three clinical assistants. These assistants will be selected from amongst the most deserving students of the Hospital; and they will, by the wise liberality of the Governors, be boarded and have their quarters free.

SUPERSTITION. For some time past, says the *Worcester Herald*, there has been a fatal malady, which has taken off great numbers of children in Studley, Coughton, and the neighbourhood. At Coughton, the people have been so far gulled by impostors as to believe that all the children who partook of wine out of the chalice from the Roman Catholic chapel would be cured of the disease at once. Such has been the want of common sense among the Protestants as well as Catholics, that great numbers flocked to the priest, and it became so much a nuisance that it had to be removed to a private residence in the village, where they could have their fill.

TO CORRESPONDENTS.

DEVONSHIRE. You seem to be labouring under a mistake. Neither the Licentiates and Fellows of the London or of the Edinburgh College of Physicians have any *legal* right to the title of M.D. If they do affix this appendage to their names, it is granted by courtesy and custom only.

FOREIGN DEGREES. A correspondent asks whether a person can style himself Dr. who is M.D. of Erlangen, but was never there, nor passed an examination?—No.

ANONYMOUS CORRESPONDENTS should always enclose their names to the Editor; not for publication, but in token of good faith. No attention can be paid to communications not thus authenticated.

Members should remember that corrections for the current week's JOURNAL should not arrive later than Wednesday.

NOTICE.—DR. WYNTER will feel obliged if the Associates will address all Post Office Orders in payment of Subscriptions, to the Publisher, MR. THOMAS JOHN HONEYMAN, 37, Great Queen Street, Lincoln's Inn Fields, London, W.C., "Bloomsbury Branch"; and he would also feel obliged by their sending all communications respecting the non-receipt of the Journal, to the same address; as both these matters are out of the province of the Editor.

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